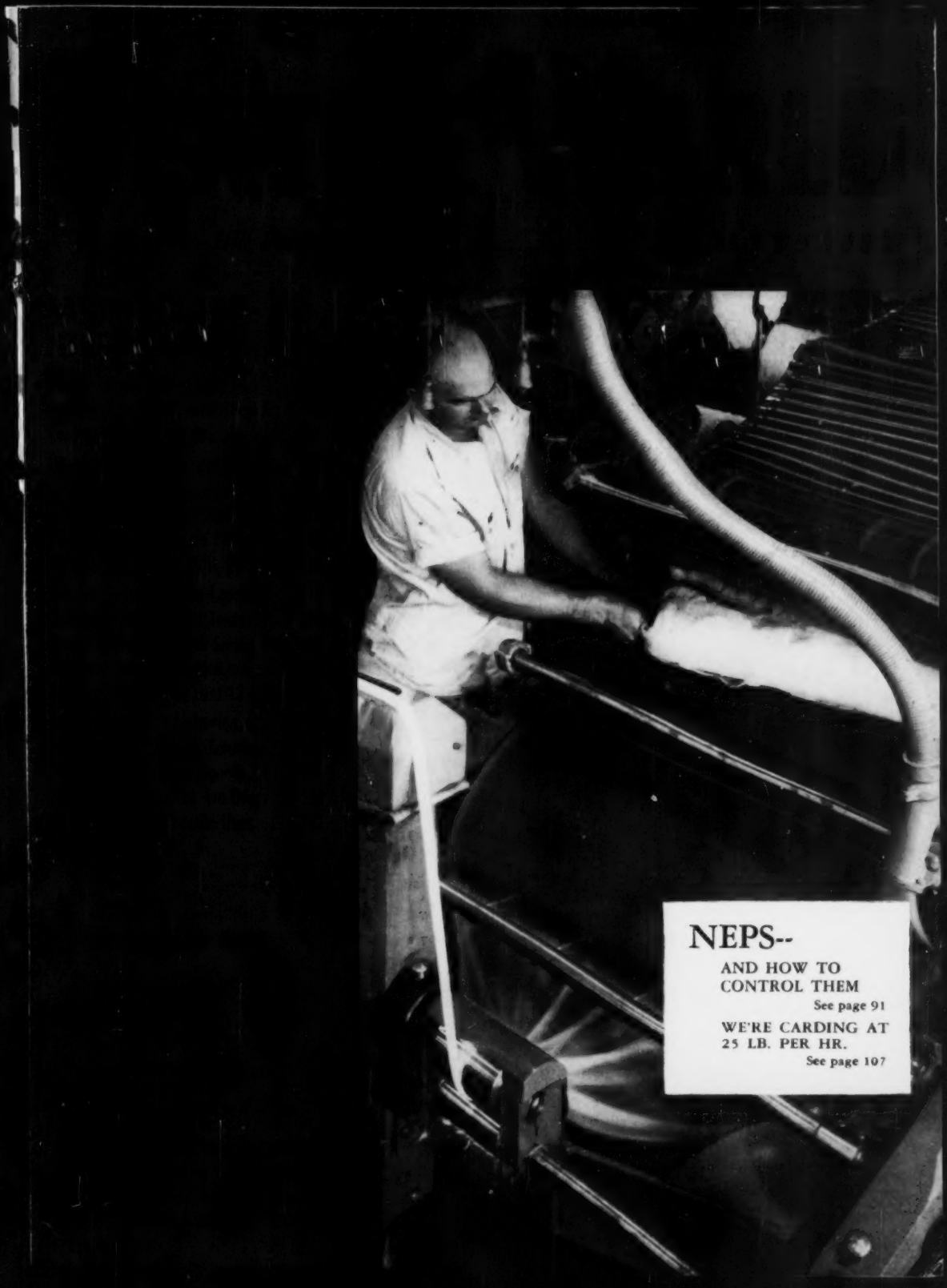

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See page 91

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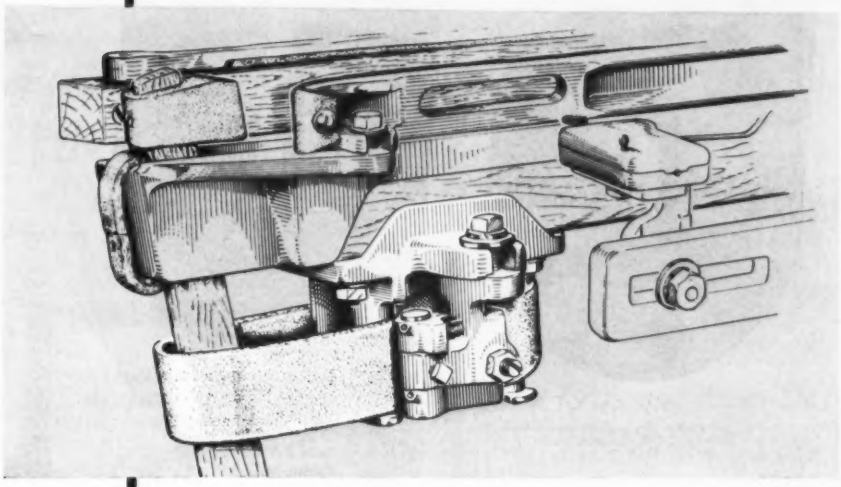

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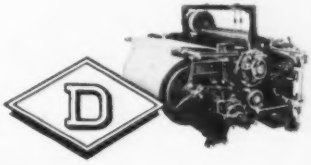

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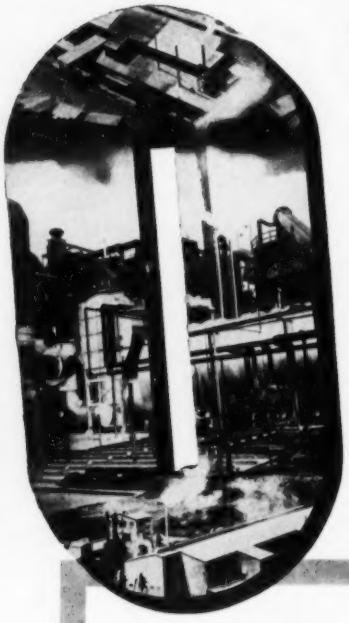

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THE Long-Range VIEW

Unions at the Crossroads

What is happening in the textile industry may prove to be a grim warning against unionism as it has been practiced. The plain truth is that unions have been so successful in the short pull that in the long run they have wheeled themselves into near disaster.

We hold no brief against the theory of unionization. We doubt that anyone would seriously question the right of workers to organize and to seek better conditions of employment. And certainly no one of sound mind wants a return to "the good old days" of cheap labor, long hours, and the stench formerly associated with the textile industry.

However, unionization has not solved some basic problems. One thing unions in New England and Pennsylvania have done is to force on mills a set of conditions that cannot stand up in the face of the operation of the American free-enterprise system.

And what is now happening to textile unions almost certainly will happen to unions in other industries.

We have become accustomed to hearing the steel industry called the bellwether of American industry. Whatever happened in steel was expected to be reflected in all industry. To a large extent that is true, particularly in these late years of enormous construction work.

But now economists are beginning to remember that very often the textile industry is a bellwether. They remember that in the late 1920's, when the country was in a great whirl of prosperity, the textile industry was a "soft spot" for years before the crash caught up with other industries. It might be remembered, too, that it was the textile industry that led the way in the Industrial Revolution and established the factory system.

Many other examples of bellwethering could be recalled; but the point is that in the textile industry union success has led to a great gray muddle that now threatens unions with destruction.

The well-known story of textile-union success is simple: Unions forced wages up, up, up; held work loads static; resisted any change except more pay, less work, and more employment; and campaigned furiously against any politician who did not favor them. As in other industries, this formula met with remarkable success.

But now that the textile industry is a "soft spot" in the economy and the non-partisan forces of competition are operating, the unions' house of cards is tumbling around their ears, and unions are caught in a squeeze. If they hang on to their "gains," the mills have to fold up because they can't meet competition. If they give up enough gains to permit mills to become competitive, their membership will scream, "Doublecross!"

There seems no question that the heyday of textile unions has passed. The turning point in their fortunes undoubtedly was the failure of Operation Dixie. Now there is nothing left for them except to lick their wounds and try to reorganize their thinking. New objectives and new rallying cries must be found if unions expect to remain a vigorous force. And, topping it all, a new type of union leadership to spark this new thinking must be developed.

Over a period of years, we have heard many mill men say: "Unions could be a good thing if they followed the constructive course they could follow." The pat union reply is: "We could 'cooperate' with management if we had security" —meaning if they were guaranteed permanent membership and efficient collection of dues.

Short of being granted absolute labor monopoly, unions have been secure in New England and Pennsylvania. That they forced mills to liquidation and migration is a strong condemnation of union power. Until we are ready to desert the free-enterprise system of business competition and engage in cartel and monopoly operations, labor inevitably is tied to the wheel of production efficiency, just as management is.

There is no indication, save the feeble cries of a few weak sisters, that the textile industry is ready to desert competitive operations. There is no indication that public opinion is ready to accept monopoly and cartels. Unions, therefore, cannot escape the demands of production efficiency. It would be far more to the point for them to drop their efforts to obtain favorable legislation and devote their brainpower to cutting away the dead wood they've heaped up in their heyday.

We understand that unions in other industries are anxiously watching the present woes of textile unions. That is a good omen. If textile unions wake up to the fact that they have been operating along impossible economic and human-relations lines, perhaps unionism throughout the country will adopt a more mature and realistic attitude. If not, it looks as though unionism will wane into a pale, impotent force that exists largely by the good graces of a pitying management and a vote-courting government.

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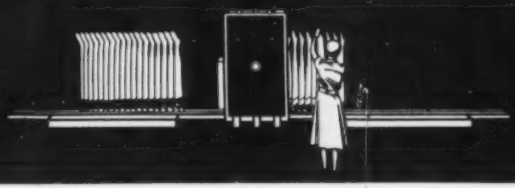

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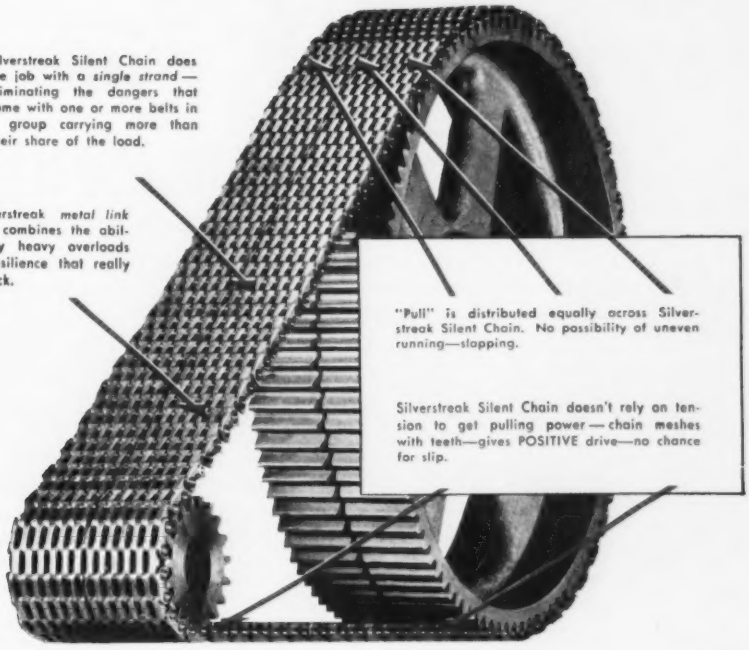
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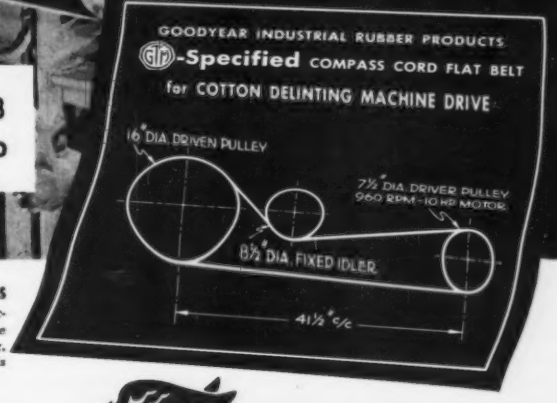
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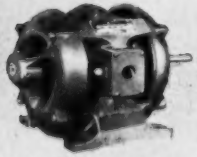
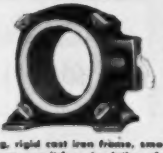
Century builds a complete line of electric motors from ⅛ to 400 horsepower in a wide range of types and kinds.

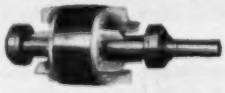
Specify Century for all your textile, or standard motor requirements.



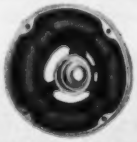
Century Textile motors are rugedly built for long service life.



Strong, rigid cast iron frame, smooth contours permit free circulation of air.



Rotor assembly with ball bearings in place. Large fans assure adequate ventilation.



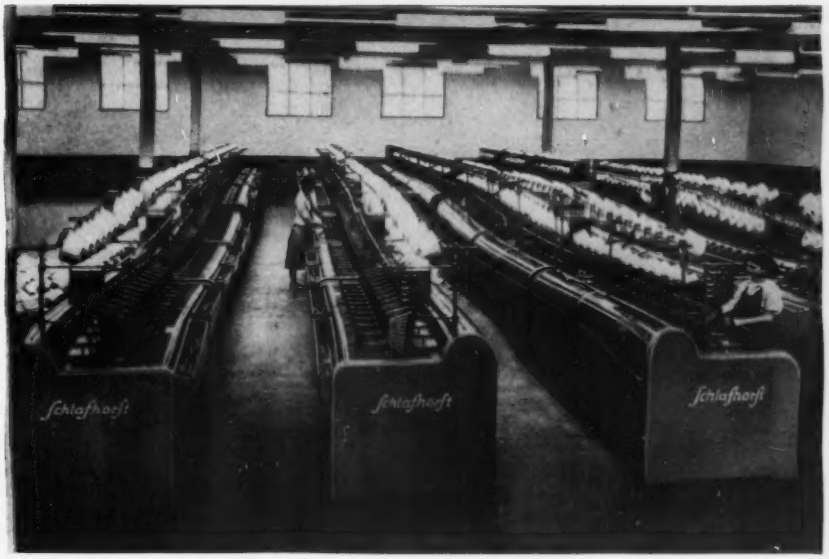
Rigid cast-iron end brackets help maintain alignment, help maintain smooth, quiet starting and running.

CENTURY ELECTRIC COMPANY
1806 Pine Street • St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

Century Electric Company is celebrating its 50th year in the electrical industry

720

Men in the Know...



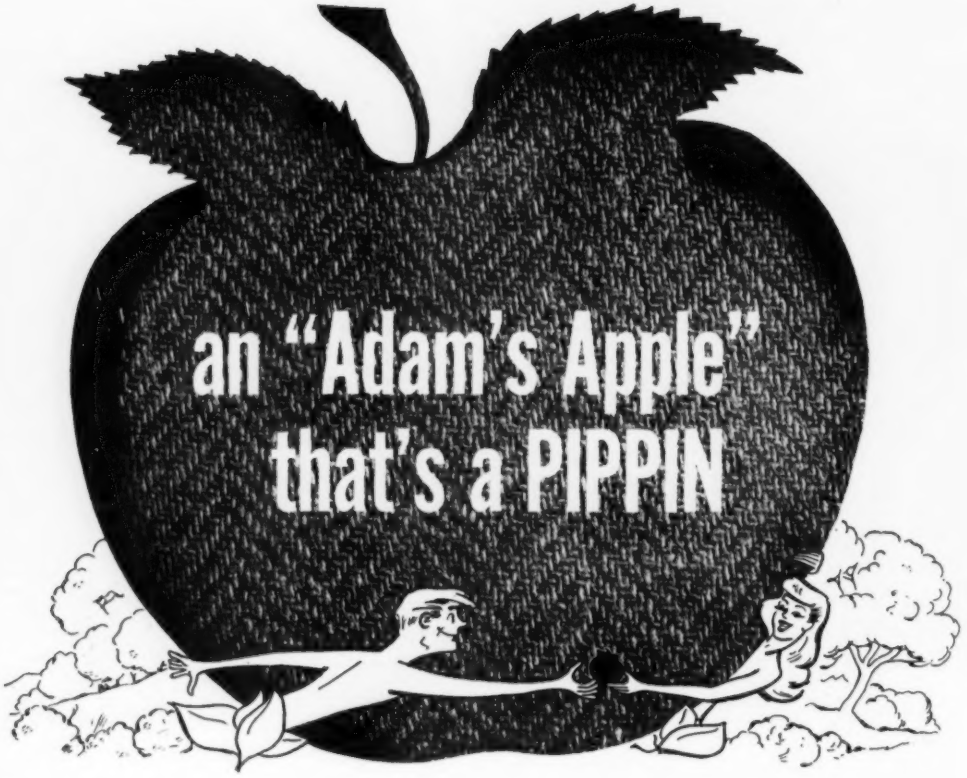
buy Schlafhorst Machinery for Winding and Warping

The illustration shows 24 Automatic Quillers of our "AUTOCOPSER SE1" pattern, of 12 spindles each.

Write for information to the Sole Makers:

W. SCHLAFHORST & CO.

M. GLADBACH GERMANY



You've probably heard them say in the industry: "Wetting agents are like Adam's apples, everybody's got one." And by "everybody," of course, they mean the makers of textile chemicals.

We're no exception; we have an "Adam's apple"—and it's a *pippin*. We offer it in the firm belief that it will not only benefit *you* but all the Adams and Eves who utilize your fabrics.

Our product is Nopco® 1086-A—an excellent wetting and rewetting agent, applicable in mild alkaline, mild acid, and neutral solutions.

We are confident 1086-A, one of the quality chemicals of our outstanding NOPCOWET* Series, will do a remarkably good job for you in numerous operations, and suggest you'll find it especially advantageous when employed as—

(1) a wetting agent in starch and softener mixes;

(2) a penetrant in the application of enzyme desizing agents;

(3) an agent for imparting a high degree of absorbency to greige goods prior to dyeing (in fact, an all-purpose dyeing assistant);

(4) a wetting agent in the processing of wool for chlorine shrinkproof treatment.

Nopco 1086-A sells competitively. In fact, it saves money for its users, since in virtually every application it proves more economical than comparable agents of this type.

If you are not using Nopco 1086-A already, consult with us. We'll gladly supply full information, and have our Technical Service Department work closely with you to achieve improvements . . . obtain goods with appeal that results in more satisfied customers and a bigger bite out of the market for you.

® Reg. U. S. Pat. Off.
* *Trademark*

NOPCO

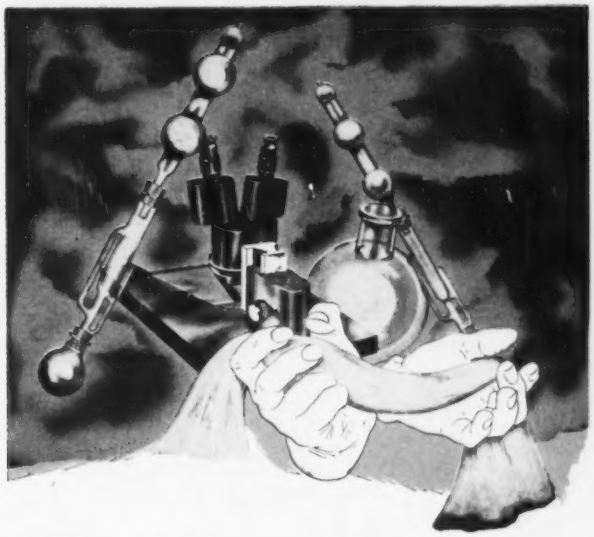
NOPCO CHEMICAL COMPANY

HARRISON, NEW JERSEY

Branches: Boston, Chicago, Cedartown, Ga., Richmond, Calif.

For more information, write direct or use Reader Service post card.

Service . . . Dependability . . . Quality Control



Why Does Star Woolen Offer FREE Laboratory Analysis of Your Fibres?

With the increasing use of synthetics in blends, many mills now find their testing facilities totally inadequate to meet the requirements of labeling laws and efficient processing. Accordingly, Star Woolen offers its modern, expanded laboratory services, without cost or obligation, as its contribution to the advancement of fibre technology in the textile industry.

Laboratory Control in Textile Fibres and Synthetic Garnets.

The primary function of Star Woolen's greatly expanded laboratory facilities is, of course, the constant control of our own production, at every stage. This exacting double-checking assures you of the utmost in product uniformity and truly superior textile fibres and synthetic garnets . . . whether your requirements call for wool, any of the new synthetics, or blends.

WRITE FOR FREE DESCRIPTIVE FOLDER 52A

STAR WOOLEN co.

Cohoes, New York

For more information, write direct or use Reader Service post card.

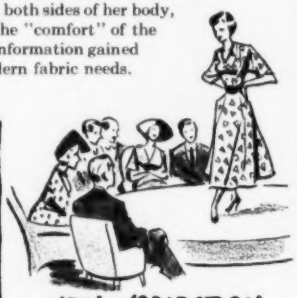
FIBER FARE... from Du Pont

BICYCLE BUILT FOR RESEARCH— *helps make clothing more comfortable!*

This pedal-pushing young lady is completely clothed on one side in a test garment. Wires taped to many portions of her body lead to instruments that record skin and body temperature, perspiration rate, weight loss and metabolism. By comparing measurements from both sides of her body, Du Pont researchers accurately determine the "comfort" of the fiber and fabric weave; and they use the information gained to build into fibers qualities to meet modern fabric needs.

STRENGTH AND *Beauty* IN THE SAME MAN-PLANNED FIBER

Rayon has long been an established leader in women's wear. Yet this same fiber, in the form of Du Pont "Cordura" High Tenacity Rayon, supplies strength to auto tires, conveyor belts and other industrial products. Man-planned fibers offer variety that nature could never attain.



NEW INSPIRATION FOR DESIGNERS ...FROM ACETATE

Today's fashion news spotlights how leading designers here and abroad are using acetate for drapability and texture interest. Acetate has a luxurious feel; produces beautiful fabrics alone or in blends.

MORE STOPPERS FOR SHOPPERS

Into the homes of consumers go big-space ads like this, appearing now in the April 26 *Saturday Evening Post*, May *American Magazine* and May 10 *Collier's*. The ad starts with an interesting "stopper" about fiber research; and it includes specific information about each of the five Du Pont fibers.

FIBER FACTS DO A SELF-SELLING JOB!

Informative labeling is one of the effective methods by which you can pass the fiber facts along to the shopper. Today's shopper is fiber-curious—she *looks* for information that tells her the exact fiber content and wearing properties of a garment. By reading a really informative label, a shopper can often *sell herself* on apparel. So display the label—*always!*

RAYON
DACRON* polyester fiber
NYLON
ACETATE
ORLON* acrylic fiber
*DU PONT TRADE MARKS

Textile Fibers Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware. Du Pont makes only the fibers — not the fabrics or finished products shown.

DU PONT

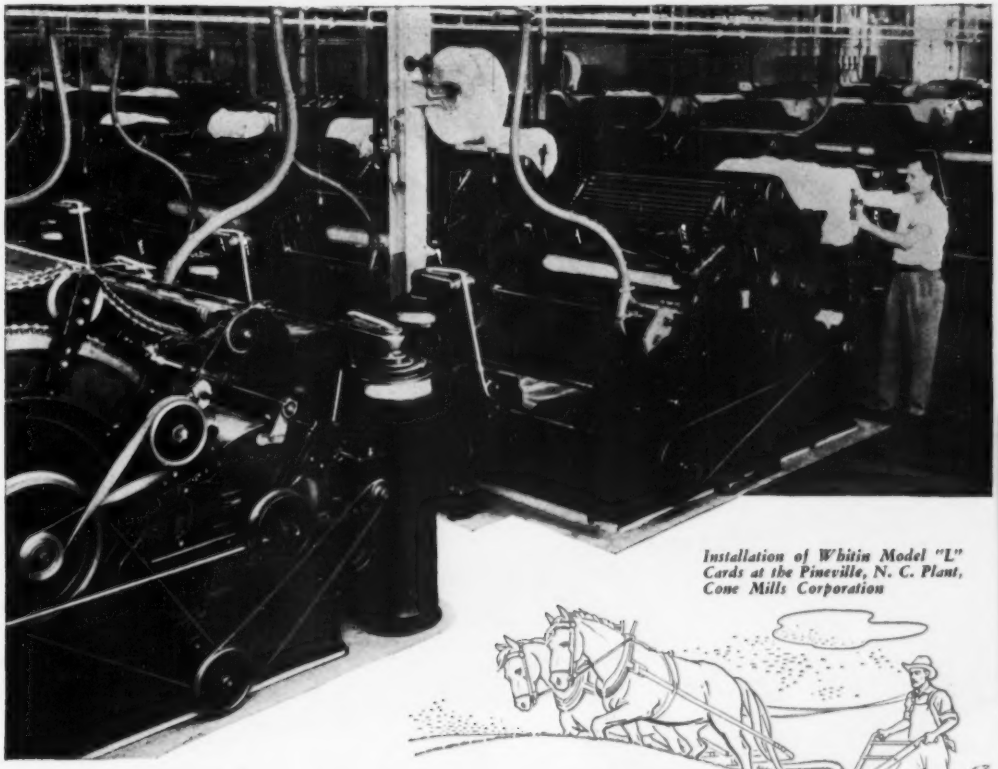
150th Anniversary

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

DU PONT FIBERS ARE PLANNED FOR BETTER LIVING

For more information, write direct or use Reader Service post card.

The WHITIN Model "L" Card . .



Installation of Whitin Model "L" Cards at the Pineville, N. C. Plant, Cone Mills Corporation

the workhorse of your card room

You can depend on Whitin Model "L" Cards to give you years of trouble-free, efficient operation. They're built to "take it." Day in and day out, they continue to deliver peak production and better quality with extremely low maintenance costs. Truly the Model "L" can be called the "workhorse of your card room."

The newly developed *steel top flats,* which are now standard equipment on the Model "L", give greater rigidity, closer and better holding of settings, reduction in variation and more uniform sliver.

Outstanding among the many special features which contribute to more profitable, all-around operation are:

- **Structural improvements in the framework, cylinder bearing pedestals, and arches insure that all the settings can be easily made and accurately held for long periods of time.**
- **Cut gearing for quiet operation.**
- **Oilite bearings in many locations for more efficient lubrication.**
- **Improved feed plate and feed roll weighting arrangement.**
- **Restyled surfaces and contours for easier cleaning and adjusting.**

If conditions in your card room indicate that new cards are needed, it will pay you to investigate the performance of the Whitin Model "L" Card.

Write today for our illustrated folder giving complete details and technical data.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

for faster, easier stripping use

TUFFER Hand Cards clean your rolls quickly with firm, yet flexible, teeth! They bite smoothly and evenly — their strength and durability mean greater stripping efficiency, less effort and arm strain, and less time lost for stripping! Whether it's Midgley's Improved or Howard's Special, you're using the best when you use TUFFER Hand Cards.

Midgley's Improved Hand Stripping Card

Indestructible backs and handles . . . Steel clamps protect edges of the card and hold them securely to the back.

Howard's Special Hand Stripping Card

Ruggedly constructed. Made of three-ply indestructible wood for strength and lightweight. Pressed steel handle.

TUFFER PRODUCTS Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Georgia and Gastonia, N. C. **Branch:** Philadelphia, Pa.

Direct Representation in Canada

A-7

. . . IT PAYS TO SPECIFY TUFFER CARD CLOTHING

For more information, write direct or use Reader Service post card.

VOGUE says

Pink

—new colour note

Sandoz offers the right combinations for your production of the **new pink** *shades . . .*

FOR SILK OR WOOL

Xylene Fast Red P
and the newly announced
Xylene Fast Bordeaux P

These colors have unusual fastness to light with superior fastness to washing, water, and perspiration.

FOR SPUN RAYON

Pyrazol Fast Rubine BLN
and
Pyrazol Fast Orange 4G

For spun rayon dress fabrics which will be anti-creased, these colors provide maximum fastness to light, perspiration, and washing.

You can depend on Sandoz to provide the best colors to meet your specified requirements.

For forecast colors as well as perennial favorites for both natural and synthetic fibers, select from the Sandoz line of chrome, acid, acetate, direct dyes and auxiliary chemicals—detergents, dyeing assistants, finishes.

SANDOZ

thinks ahead with textiles

SANDOZ

SANDOZ CHEMICAL WORKS, INC., 61 Van Dam Street, New York 13, N. Y. Sales Offices: Boston, Providence, Fairlawn, N. J., Philadelphia, Charlotte, Chicago, Los Angeles, Montreal, Toronto.

Three Products that Solve Three Problems

on wool, cotton, and man-made fibers

- *scouring*
- *dispersing dyestuffs*
- *wetting out*

Sandopan TN

scouring efficiently alone
or in combination
with soap or alkali . . .
excellent in scouring, boil-off,
kier boil, and for soaping-off,
vats, and naphthols

Sandopan TFL

disperses dyestuffs and
simultaneously prevents
the formation of dye specks . . .
eliminates crack marks
during dyeing

Sandozol N

for instantaneous and even
wetting from 70° F to 200° F
offers fastest way to move
goods from the loom to the
finishing department

These Sandoz products can be used singly or in combination.

Send for your copies
of these new Sandoz booklets:

SANDOPAN TN
SANDOPAN TFL
SANDOZOL N

SANDOZ Chemical Works, Inc., 61 Van Dam Street, New York 13, N. Y. *Sales Offices:* Boston, Providence, Fairlawn, N. J., Philadelphia, Charlotte, Chicago, Los Angeles, Montreal, Toronto.

SANDOZ *thinks ahead with textiles*

SANDOZ

stainless is valuable these days

Since stainless *is* so valuable, plan to make it go further.

Specifically, this means selecting a grade or finish of stainless that, besides doing the job adequately, will be in less demand than one you have been figuring on.

Here is where Crucible can help you out. The matchless experience of our metallurgists and stainless fabricating specialists can help you get the most out of your share of stainless.

Call upon us to help you.

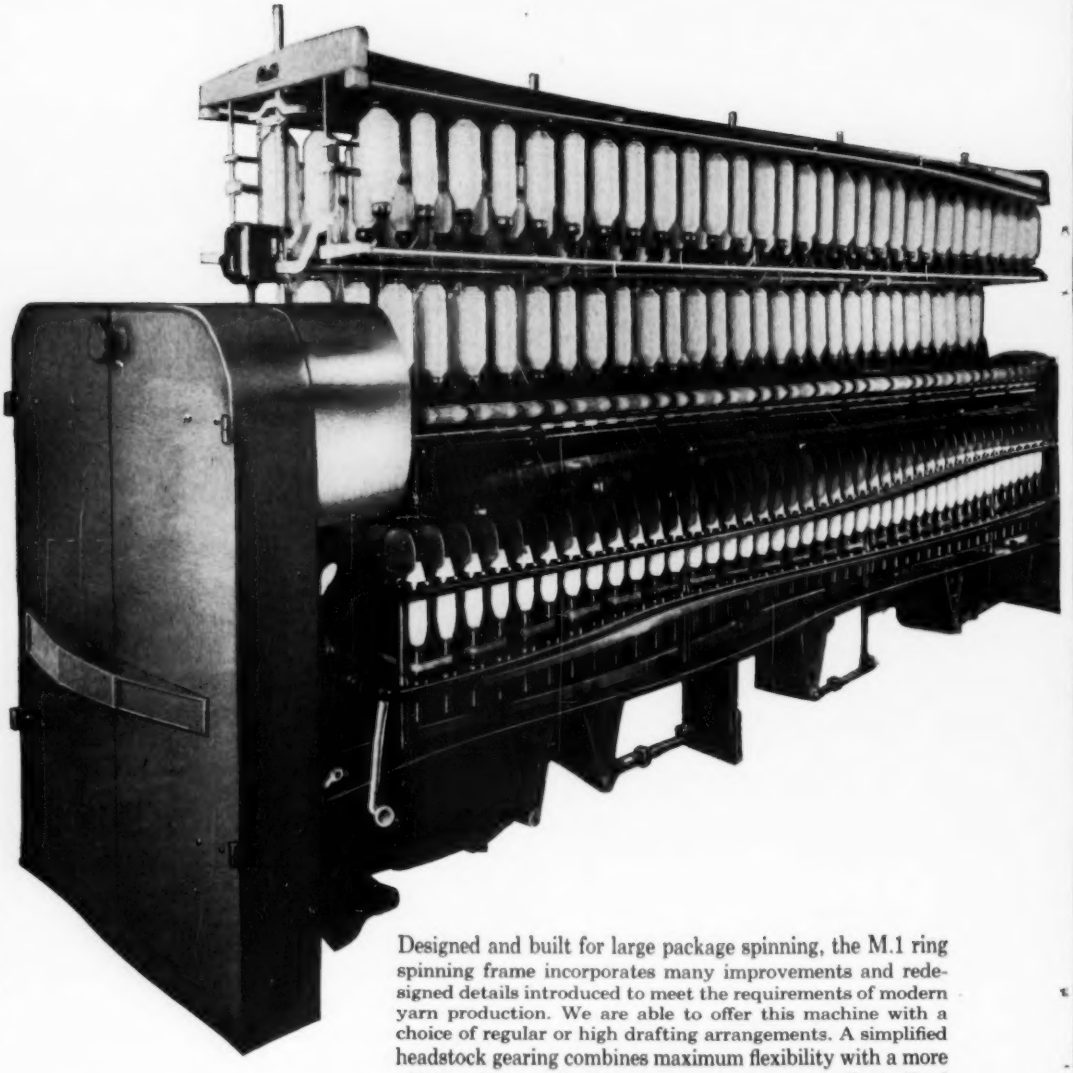
CRUCIBLE first name in special purpose steels

52 years of Fine steelmaking

STAINLESS STEEL

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

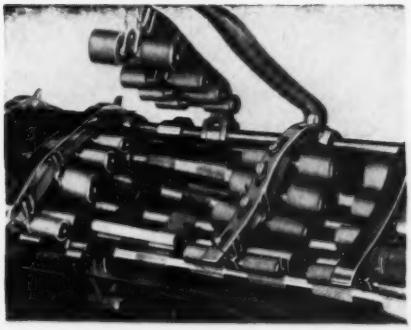
REZISTAL STAINLESS • REX HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE STEELS



Designed and built for large package spinning, the M.1 ring spinning frame incorporates many improvements and redesigned details introduced to meet the requirements of modern yarn production. We are able to offer this machine with a choice of regular or high drafting arrangements. A simplified headstock gearing combines maximum flexibility with a more efficient drive and reduces power consumption. Centralized headstock lubrication allows the frame to be oiled while running. A combination building motion may be used which enables three types of build to be obtained on the same frame by means of simple adjustments. The Pneumafil system of broken end collection is optional. May we send you full data.

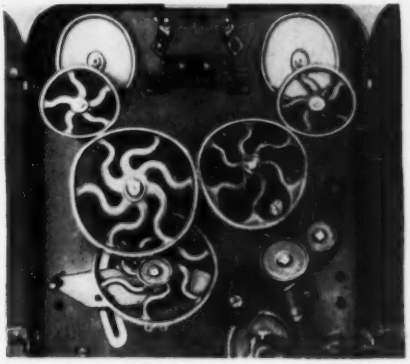
M1 LARGE PACKAGE RING SPINNING FRAME

PLATT BROS.
SALES LTD. OLDHAM, ENGLAND



NEW! SPRING ARM ROLLER WEIGHTING

Weight hooks and stirrups are gone. New spring arm adjusts to a wider range of staple lengths without altering the nip pressure. Resilience and pressure remain correct even after regrinding cots. Instant pressure release saves cots over week-ends. Central roller support arm raises for quick cleaning of ALL rollers. Few oilings are needed and none near the cots. (Pat Pend.)

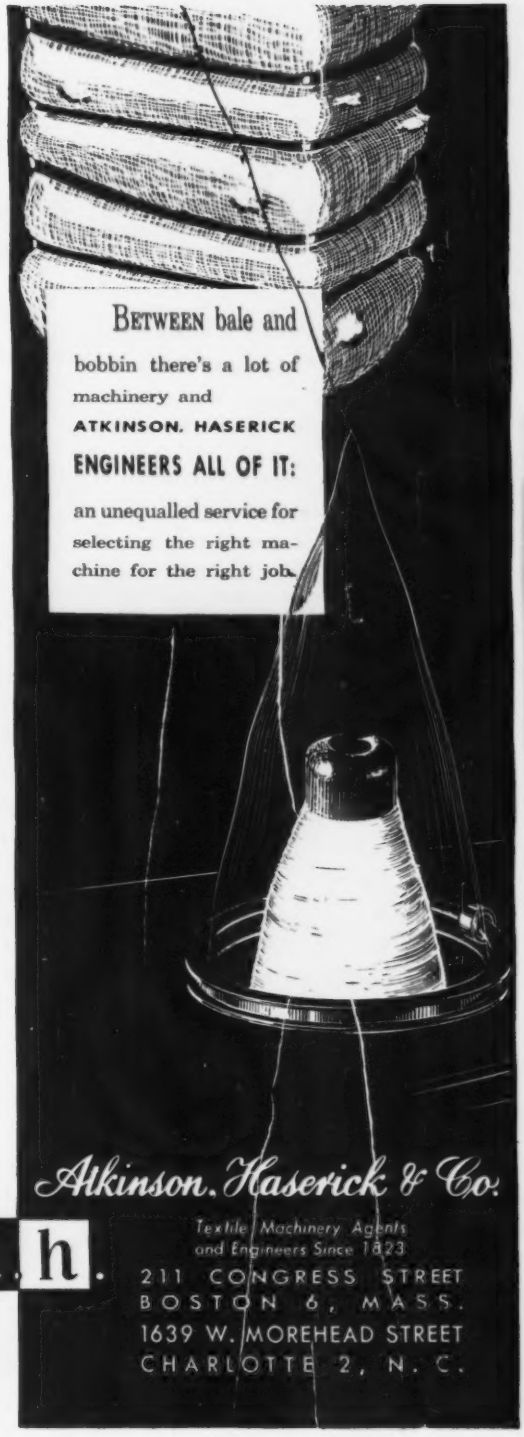


SIMPLIFIED HEADSTOCK

Headstock gearing has a central lubrication system allowing frame to be oiled while running and avoids excess or under lubrication. Simplified gearing combines flexibility of turns per inch while using fewer gears. Greater efficiency is attained and less power consumed.

HIGH SPEED SPINDLE

Cut-away, shows the heavy load, roller bearing spindle for large packages with long lifts. It is of the oil cushion ring brake insert design. They need routine maintenance at only 2,500 hour intervals. Power savings run up to 15% on this type of spindle.

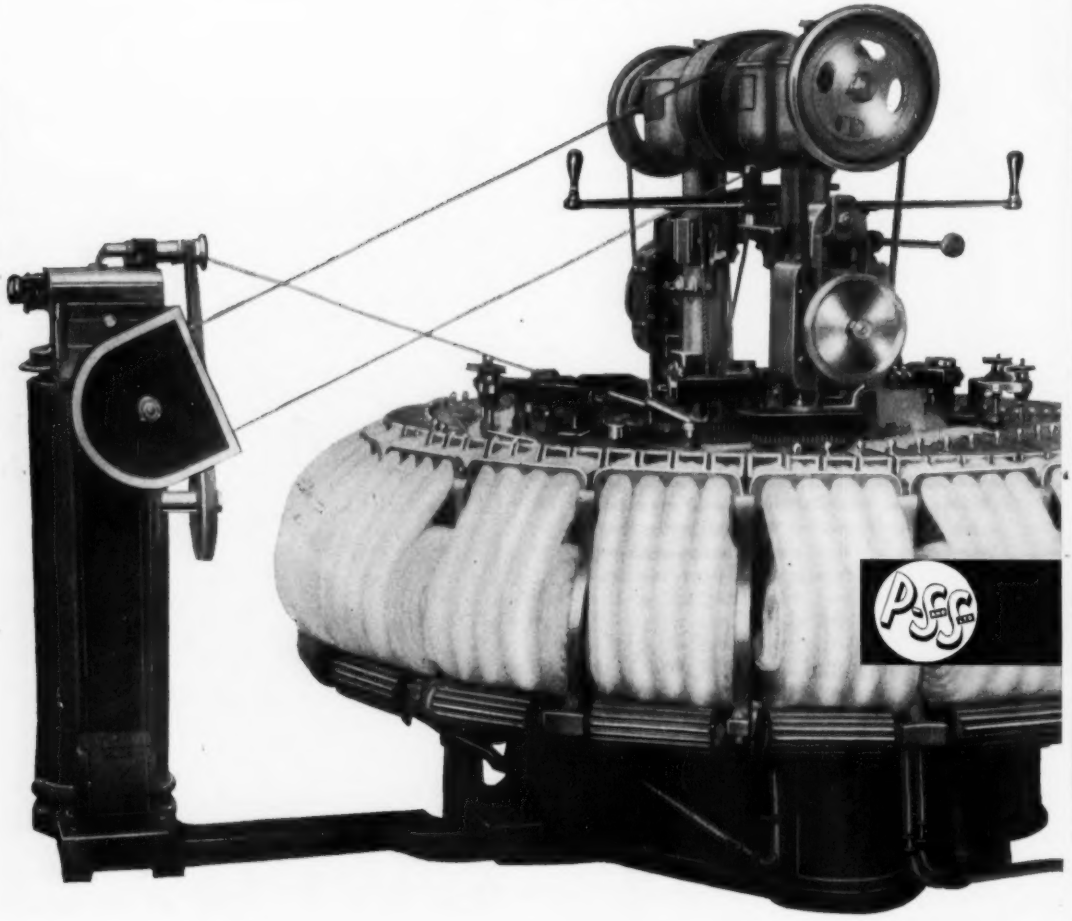


For more information, write direct or use Reader Service post card.

Prince-Smith & Stells

NOBLE COMB

This machine is the standard throughout the world for combing longer types of wools, synthetics and blends by reason of its simplicity, low cost of upkeep and productive capacity. Some of the features of this machine are shown on the opposite page. Complete data will be supplied upon request.



For more information, write direct or use Reader Service post card.

FEATURES

Perfectly balanced dabbing motion reduces vibration and wear.

Circles with different pinning for certain qualities of wool and other fibers are interchangeable without disturbing the gearing.

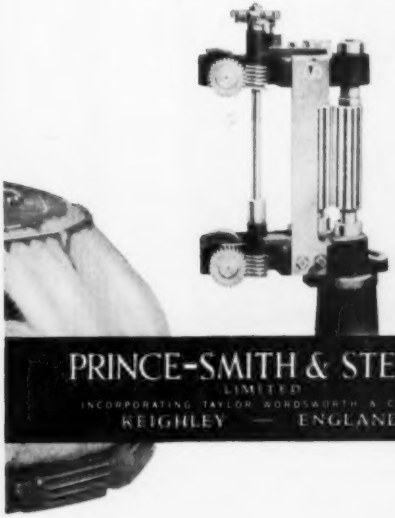
New stop motion is highly sensitive to laps on the aprons. Eliminates risk of damage to drawing-off aprons and circles.

New type circle cleaner raises residual fibers to the top of the pins.

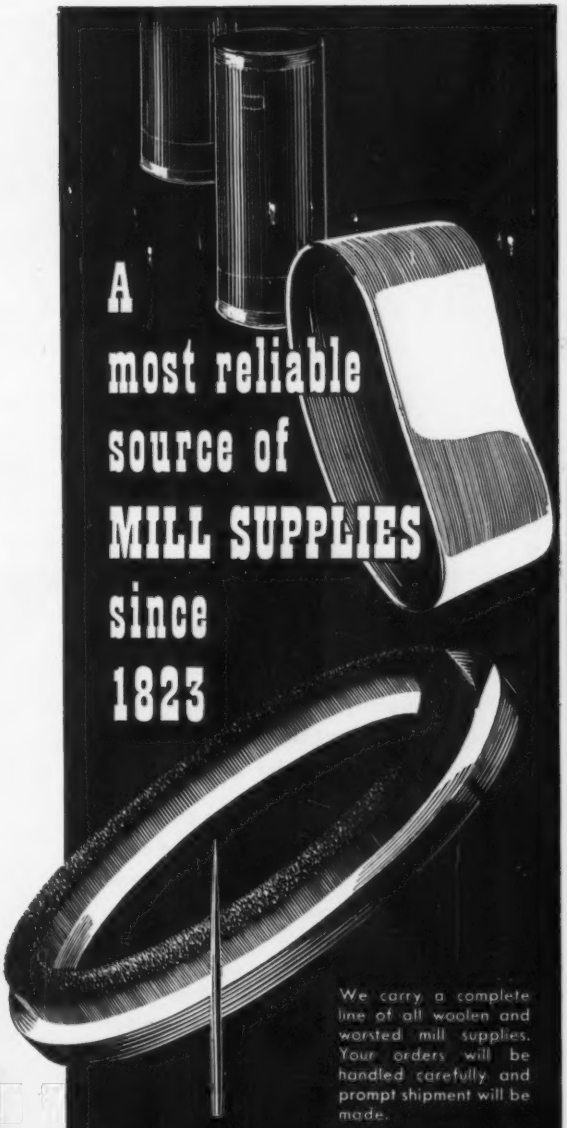
The "Perfect" feed knife maintains ideal feeding conditions automatically and eliminates the human element.

P.S.B. ROLLER STAND

The patented roller stand assures absolutely equal pressure at each end of the rolls and allows easy replacement of the aprons. Adjustments may be made while the machine is in operation.



PRINCE-SMITH & STELLS
LIMITED
INCORPORATING TAYLOR WORDSWORTH & CO. LTD.
KEIGHLEY — ENGLAND



A most reliable source of MILL SUPPLIES since 1823

We carry a complete line of all woolen and worsted mill supplies. Your orders will be handled carefully and prompt shipment will be made.

Atkinson, Haserick & Co.

Textile Machinery Agents and Engineers Since 1823

a.h.

211 CONGRESS STREET
BOSTON 6, MASS.
1639 W. MOREHEAD STREET
CHARLOTTE 2 N. C.

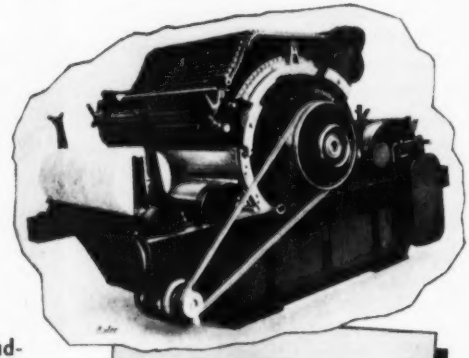
REVOLVING FLAT CARDING ENGINE

with

CENTRAL FLAT ADJUSTMENT

and

triple can coiler



Great rigidity, smooth and flat shrouding, low compact build are outstanding features of the Rieter card.

Positive drive to all working parts, assembly of all change places in a common gear box and a neatly designed individual electric drive facilitate attendance.

Revolver coilers in combination with a measuring motion represent another improvement offering at the same time the advantages of the introduction of predetermined sliver lengths also on cards.

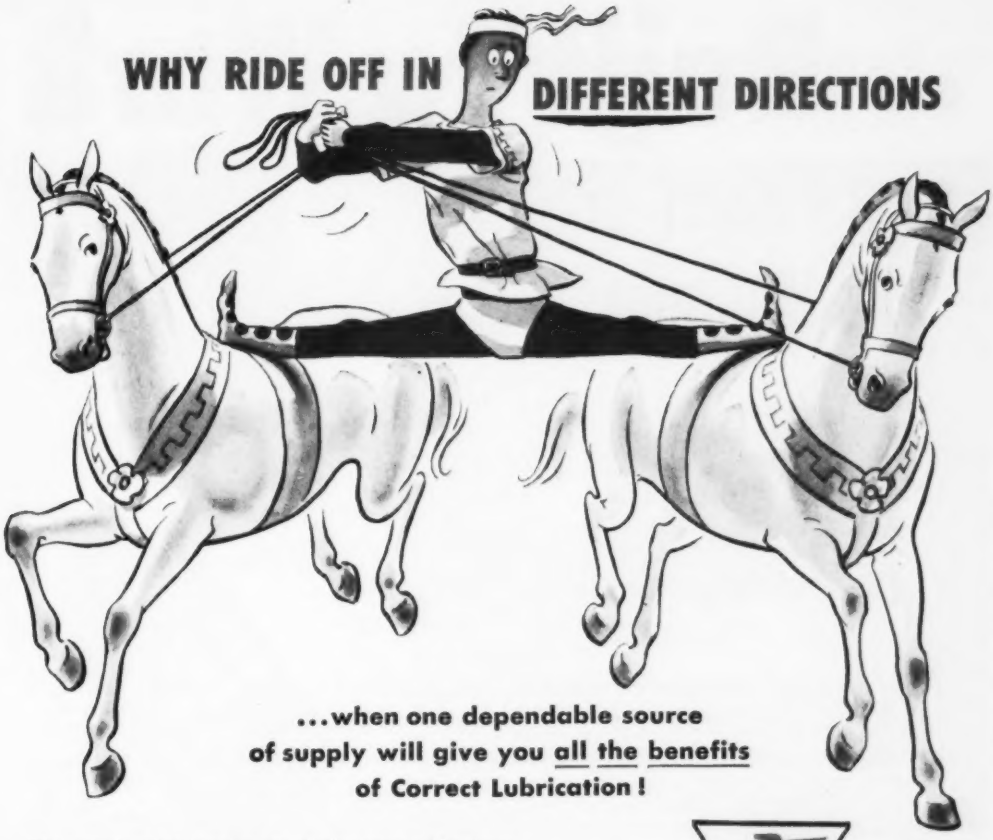
Sole Agents in U. S. and Canada

AMERICAN RIETER COMPANY, INC.

577 KEARNY AVENUE — ARLINGTON, NEW JERSEY, U.S.A.

No. 5 of a series introducing Rieter Products

WHY RIDE OFF IN DIFFERENT DIRECTIONS



...when one dependable source of supply will give you all the benefits of Correct Lubrication!

The questionable benefits of splitting your oil business are far outweighed by the *positive* benefits of buying all your lubricants from one reputable supplier.

For example—your decision to buy from Socony-Vacuum brings you an analysis of your plant lubrication, recommendations to improve lubrication efficiency, continuous engineering service and proof of benefits.

Designed for *your* machines, this program of Correct Lubrication pays off in greater efficiency, less power loss, lower maintenance and over-all lubrication costs.

Why not call your Socony-Vacuum representative *today?*

SOCONY-VACUUM

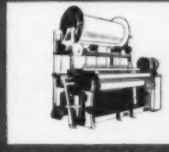
SOCONY-VACUUM

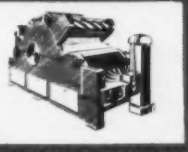
Correct Lubrication

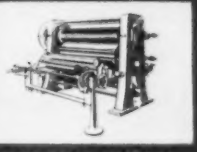
WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

SOCONY-VACUUM OIL COMPANY, INC. and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

The Right Oils for Spindles, Looms...Every Machine in Your Mill







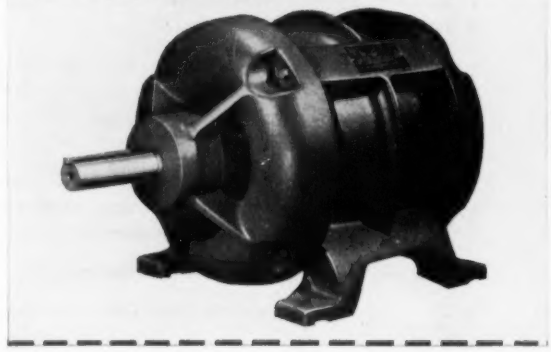
BACKED BY THE WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

Built to Work

From Power Line to Machine

ALLIS-CHALMERS

TEXTILE DRIVES



YOU WILL SAVE MONEY by getting your complete machine drives from one dependable source. When you use Allis-Chalmers coordinated drive components, you can be sure that they will be installed easily and quickly and that they will work together to give you dependable service at lowest possible cost. One reliable manufacturer guarantees the satisfactory operation of your complete machine drive.

COMPETENT APPLICATION ENGINEERING

Allis-Chalmers application engineers, practical men with an intimate knowledge of the textile business, will help you select the best combination of motor, drive and control for your particular requirements.

If you are building a new mill or modernizing your old mill for higher speed operation and lower costs, discuss your drives with the Allis-Chalmers representative in your territory. He can help you plan for more profit. Allis-Chalmers, Milwaukee 1, Wisconsin. A-3708

Texrope, Quick-Clean and Vari-Pitch are Allis-Chalmers trademarks.

Allis-Chalmers Textile Specialists

are located in the following cities:

Atlanta, Georgia
Birmingham, Alabama
Boston, Massachusetts
Charlotte, North Carolina
Chattanooga, Tennessee
Dallas, Texas
New Orleans, Louisiana
Richmond, Virginia

Better Together

MOTOR CONTROL

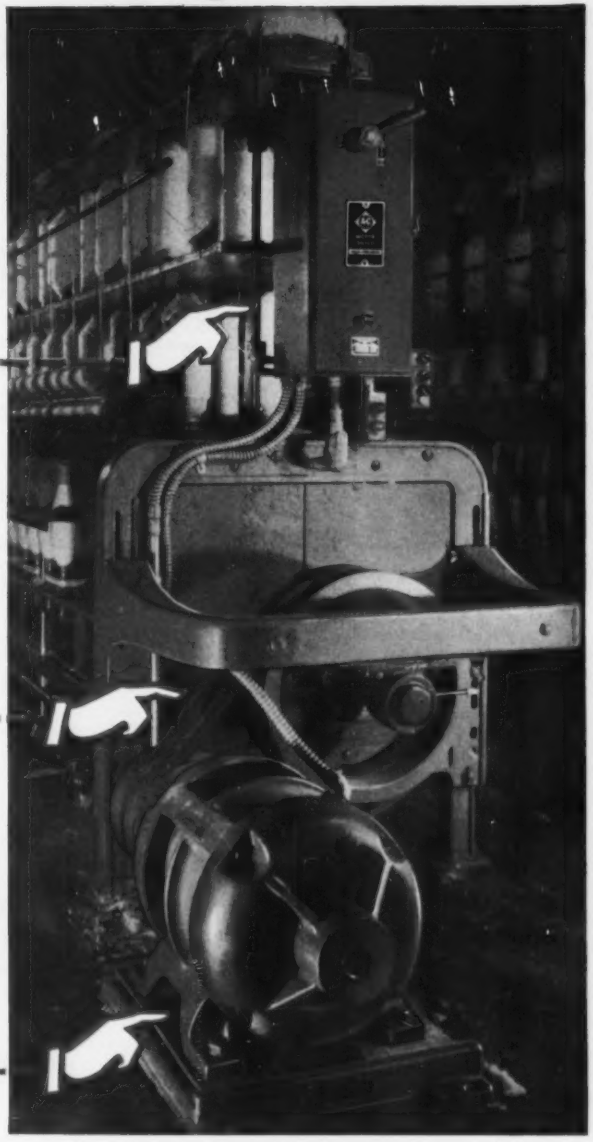
Standard types of textile motor control built to operate with Allis-Chalmers loom motors, *Quick-Clean* motors and all other Allis-Chalmers motors used in the textile industry. This is a full voltage AC magnetic starter with fusible disconnects which provides overload and undervoltage protection. Other starters are available for special service such as slow speed starters for card drives, loom switches and many other types preferred by textile mill operators. Enclosures may be lint-proof with interlocked cover handles for safety.

TEXROPE DRIVE

Texrope V-belt drives, the original multiple V-belt drives for textile machinery, are available in both fixed and variable speed types. More and more mills are finding that the moderate extra cost of *Vari-Pitch* sheaves comes back many times in increased machine versatility and more precise quality control as well as reduced down-time for change-overs. With either Stationary Control or Motion Control *Vari-Pitch* sheaves, speeds can be accurately adjusted quickly and easily. Wide Range *Vari-Pitch* Sheaves cover complete operating range of most machines with one drive.

TEXTILE MOTOR

Quick-Clean motors are of special wide-open design which cannot trap lint, overheat and burn out. Powerful fans sweep lint-laden air into the motor and right out again through large, unobstructed ventilating openings. All internal air passages are smooth, hard and streamlined so that lint cannot lodge. *Quick-Clean* motors are built with special acceleration and torque characteristics to meet special requirement of roving frames, cards and other machines. A special totally-enclosed, non-ventilated loom motor also is available.



ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

New Westinghouse Fluorescent Mercury lamp Gives Golden-White light

Here's the biggest lighting news since the introduction of the fluorescent tube! The new Westinghouse 400-watt fluorescent mercury lamp produces a golden-white light suitable for practically all industrial lighting. In addition, the J-H1 has all the important mercury lamp advantages of high light output, top efficiency and long life. You can get complete technical data and practical application information by contacting the Westinghouse Lamp Sales Office nearest you. Or simply write the Lamp Division, Westinghouse Electric Corp., Bloomfield, New Jersey.

FOR INDOORS
The J-H1 gives plant interiors golden-white light from standard H-1 sockets; needs no additional equipment other than the usual mercury lamp auxiliaries.

FOR OUTDOORS
The J-H1 is ideal for lighting large areas to combine the efficiency, high light output, and long life of mercury lighting with a whiter light.

YOU CAN BE SURE...IF IT'S

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AGAIN WESTINGHOUSE MAKES HISTORY! Complete coverage of Presidential Campaign from conventions to election over CBS television and radio.

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And to do each job *equally well.*

This enables you to do *all* your lubricating with *fewer* lubricants. In other words, you can

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If you are interested in something that can definitely cut your costs (and who isn't, in times like these?), write: The Pure Oil Company, Industrial Sales, 35 E. Wacker Dr., Chicago 1, Illinois.

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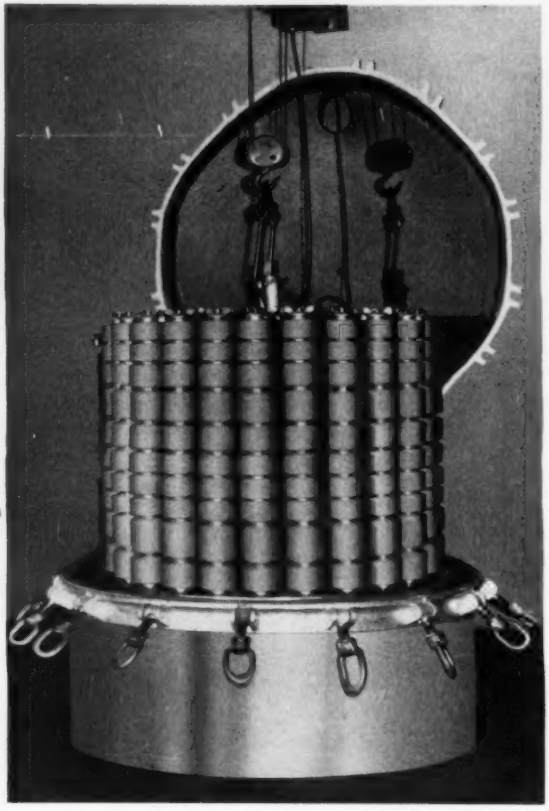
GASTON COUNTY'S COMBINATION EXTRACTOR-DRYER FITS THE REQUIREMENT OF ANY DYE HOUSE



Here's the outstanding combination extractor-dryer—with speed and efficiency proved by many years of satisfactory mill use.

Mills using this equipment report the extracting and drying of package-dyed yarn in periods of one and one-half to two hours. Drying time varies with the temperature used, density of packages, count of yarn and types of color.

Dye houses of any capacity benefit from the quick-drying, space and labor-saving features of the Gaston County combination extractor-dryer. For small production, one machine does the entire job—for larger production it may be used for extracting only, in combination with open port dryers. Let us show you how this machine can save money for you, as it has for other leading dyers.

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. . . on dye sticks, poles, trucks, bins, bobbins, drying reels, calenders, tenter frames, dye kettle interiors, acid vaporizing tanks, inspection tables, skein extractors, shrinking tables, twister rolls, oven trays and loom harness. Wherever chemicals, rust and moisture quickly destroy ordinary maintenance paints, Tropical stands up and gives extra services. And for smooth, snag-proof, lint-free surfaces, Tropical has the answer!

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On these amazing weaving instruments, individual ideas and creative gifts find fuller scope for magnificent expression . . . in patterned silks, rayons, synthetics, blends, woolens, worsteds, carpetings, narrow fabrics . . . or what new idea have *you* in mind on which to build a spectacular merchandising triumph . . . another outstanding "personal success."

C&K can help you to develop your theme . . . to score it for its richest tones . . . and to produce it for top "box-office appeal" . . . any time you say. Just write.

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Why your machinery and motors last longer with LINK-BELT Fluid Drive's constant

CUSHION ACTION

IF YOUR MACHINE loads are of the high inertia, repetitive shock or high starting torque type, Link-Belt's Fluid Drives can save you money.

Constant CUSHION ACTION gives you the shock absorption and overload protection you need. More—because shock load service factors can be disregarded, you can use power transmission equipment of lower horsepower.

Check the three curves below. They demonstrate three exclusive advantages of CUSHION ACTION. And for more detailed information, write for Book 2485. In it you'll find all the facts on five types of Link-Belt Fluid Drives —Electrofluid Drive, Electrofluid Gearmotor, Fluid Drive, Fluid Gear Drive and Fluid Coupling Drive.

Cutaway shows simple, rugged construction of Link-Belt Fluid Drive.

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa), Sydney (Australia). Offices, Factory Branch Stores and Distributors in Principal Cities.

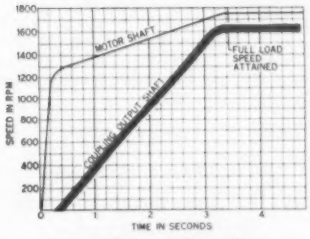
LINK-BELT

FLUID DRIVES

12,654

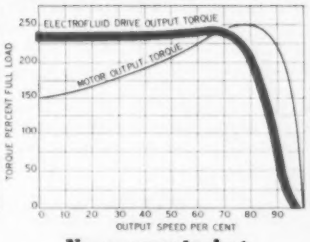
Here's proof—

that LINK-BELT CUSHION ACTION offers you real savings . . .



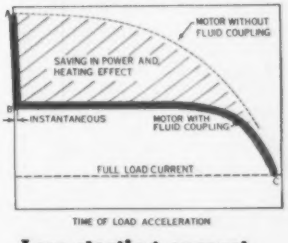
Smooth acceleration

Typical motor and coupling acceleration curves for a high-inertia load show how CUSHION ACTION smoothly and gradually accelerates the load, saving wear and tear on vital equipment.



No overmotoring

Compare the output torque of a motor with and without the fluid coupling. Because motor accelerates free of load, it reaches maximum pull-out torque that might otherwise require a special type of oversize motor.

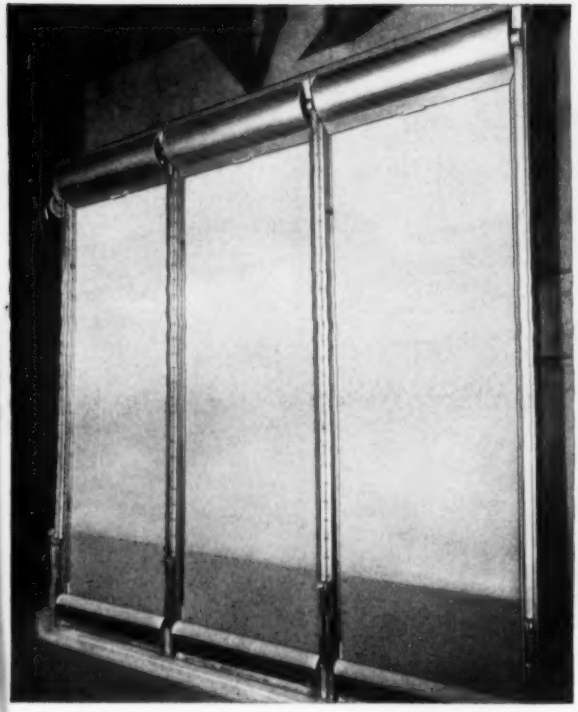


Low starting current

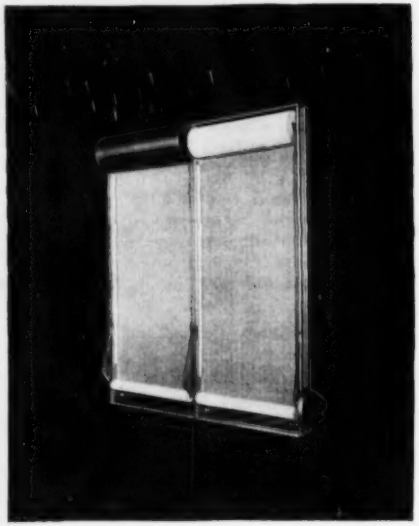
As these current consumption curves show, with the fluid coupling, motor starting current drops instantaneously to less than half the starting current required by a motor without fluid coupling. Difference represents power savings, reduced heating.

 For more information, write direct or use Reader Service post card.

today's best buy is better air!



New 3 section Auto-Airmat installation cleans return air from weaving room.



A No. 8-84 Auto-Airmat Filter with one top cover retracted to show supply roll of 1-ply Airmat media.

automatic, self-cleaning lint filter ...AT WORK

AAF's Auto-Airmat is specially designed for Textile Mill service.

The new Auto-Airmat installation above is cleaning return air from a weaving room. The accumulated lint on the face of the filter is typical of a costly problem and a practical, economical solution. This automatic, self-cleaning lint filter not only cleans return air efficiently, but provides easy disposal of lint and reduces costly "overtime" maintenance on air washers.

In the Auto-Airmat a sheet of Airmat* media moves downward on an endless screen from a roll at the top of the filter. The media is rerolled at the base with its lint load . . . ready for easy disposal. The rate and frequency of screen travel is automatically controlled by a pressure switch. This starts the drive mechanism when resistance builds up to a predetermined maximum. The screen stops when sufficient clean Airmat has been introduced to reduce resistance by 0.1" wg.

Auto-Airmat maintains maximum filter efficiency at all times with minimum servicing and is available in many sizes and arrangements that meet virtually any air volume requirements.

If lint from your weaving, carding or spinning rooms is proving a costly problem, call your AAF representative . . . or write for our Engineering Bulletin No. 234.

★ ★ ★

** AIRMAT is the trademark (Reg. U.S. Pat. Off.) of the American Air Filter Company, Inc., for various air filters, dust collectors, and filtering media.*

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American Air Filter of Canada, Ltd., Montreal, P.Q. • Pacific Division Offices, San Francisco, Cal.

for wool and mixtures

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EXCLUSIVE

NATIONAL ALIZARINE VIOLET NRR

A natural for dress goods, coatings and suitings . . . a valuable shading color for Government specification cloth, National Alizarine Violet NRR possesses brightness and fastness unusual in the violet area of the spectrum.

Non-dusting, anthraquinone acid dye, National Alizarine Violet NRR has very good fastness to light, alkalis and sea-water bleeding; excellent fastness to stoving, water spotting, cold water bleeding, carbonizing and crocking.

With very good solubility and excellent level-dyeing properties, it should be applied to wool from a weakly acid bath, although it also dyes well from a neutral bath. Silk effects are dyed slightly less and nylon effects slightly more than wool. Cotton, viscose and acetate effects are only slightly stained.

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Our nearest office will be glad to send you a copy of this new technical bulletin which shows complete fastness ratings and dyeings on worsted yarn and wool-cotton piece goods.

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Its ease of application is exceeded only by its

SUPERB PERFORMANCE

New EMERY GRINDING FILLET

The new Emery Fillet by CARBORUNDUM delivers outstanding advantages: even grooving that assures true side grinding, no chiseled points... smooth edges that assure no gaps in the spiral winding, either on long rolls or on the traverse grinder... finest Turkish emery, securely anchored to the backing, thus assuring no shedding of particles into the grooving.

For uniform, long-life, trouble-free reconditioning of card clothing, there's no finer product made than Emery Fillet by CARBORUNDUM. Order now from your CARBORUNDUM or distributor salesman. It's immediately available.

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Reduce Down Time and Maintenance With Westsorb

VIBRATION-ABSORBING MACHINE MOUNTS— TIE DOWN MACHINERY WITHOUT BOLTS

Westsorb felt mounts with adhesive already applied on both sides are proving superior for every vibration cure. They are being employed under both new and old equipment —on old floors and new. Machine speed may be increased, there is less down-time. Floors and equipment last longer and noise is minimized.

Westsorb mountings don't break down under heaviest loads and impacts. They resist oil, acid, grease, water, age — do not ravel or fray. They are simple to install—no holes or bolts. Western Felt engineers and dealers located throughout the textile areas are anxious to cooperate.

WESTSORB
Vibration-absorbing Machine Mounts

Increase Production
Decrease Floor Wear
Save on Machine Repair
Reduce Plant Noise
Thickness for Every Need
Engineered for Each Job
Investment is Small
Easily and Quickly installed

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contains data on tests of Westsorb vibration-absorbing efficiency under looms and knitting machines.

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Thermometers

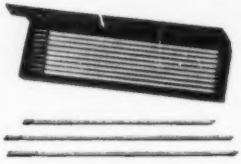
in all forms—ranges—stem lengths—connections

Whether your requirement calls for certified laboratory thermometers . . . or rugged all-metal industrial types . . . or thermometers for remote reading . . . you'll find *exactly* what you require in the Weston-TAG line—*the most comprehensive line of quality thermometers ever offered by ONE manufacturer.* Literature on request. WESTON Electrical Instrument Corporation, 617 Frelinghuysen Avenue, Newark 5, New Jersey.

Laboratory

ALL-METAL

—have readable, dial-type scales and corrosion-resisting stainless steel stems—stem lengths from 2" to 24"—ranges from low as −100°F. to high as 1000°F.—accuracy ½ of 1% of thermometer range.



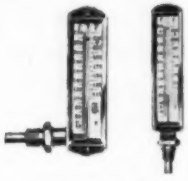
GLASS

—certified sets of ASTM Testing thermometers with overlapping ranges in protective case. Ranges from −36°F. to high as 760°F. Also precision and standard etched stem thermometers for general testing.

Industrial

ALL-METAL

—provide unmatched readability and durability—accuracy within 1% of thermometer range. Available in all types, ranges and stem lengths (2½" to 72") for all requirements.



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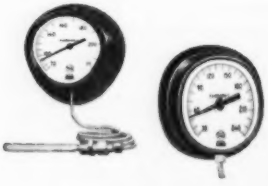

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—for remote reading, in 5, 6 and 8" dial sizes. Ranges from low as −325°F. to high as 1000°F. Accuracy one scale division unaffected by vibration or severe shock. Cases of iron, brass, or plastic.

WESTON *Temperature Instruments*

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"TAG" Automatic Controllers Record Temperature, Pressure

Pressure, vacuum or temperature can be automatically regulated and recorded with the Pneumatic Recorder-Controllers produced by TAGliabue Instruments Div., Dept. 67, Weston Electrical Instrument Corp., Newark 5, N. J. These devices maintain conditions for which they are set by varying control line air pressure, which operates a diaphragm valve to regulate flow of fluid (gas, steam, liquid) to the equipment being controlled. At the same time, the instrument continuously records actual temperature or pressure on a circular chart.

Operating on an air supply of 18 p.s.i., TAG Recorder-Controllers handle temperatures between −100°F. and 1000°F., vacuum as great as 30" mercury, or pressures up to 7500 p.s.i.

"TAG" Temperature Recorders Chart from −300° to +1000°F.

Accurate written records of varying temperatures are charted by the Temperature Recorders produced by TAGliabue Instruments Div., Dept. 67, Weston Electrical Instrument Corp., Newark 5, N. J. Temperatures as low as −300°F. or as high as +1000°F. can be recorded with these versatile instruments.

Various types of actuations in TAG Temperature Recorders achieve scale expansion for utmost precision over the working ranges. Interchangeable tube systems are laboratory calibrated at the factory. A safety link provides over-range protection. Details are given in Catalog 1210.

"TAG" Pneumatic Controllers Govern Temperature, Pressure

Pressure, vacuum or temperature can be accurately regulated by the Pneumatic Controllers engineered by TAGliabue Instruments Div., Dept. 67, Weston Electrical Instrument Corp., Newark 5, N. J. These trustworthy devices maintain the conditions for which they are set by varying air pressure in a control line, which in turn operates a diaphragm valve to increase or decrease the flow of fluid (air, gas, steam, liquid) to the equipment being controlled.

Operating on an air supply of 18 p.s.i. pressure, TAG controllers handle temperatures between −100°F. and 1000°F., or pressures between 30" vacuum and 7500 p.s.i.

Split-second follow thru

"Live-Stick" action of G&K Hairitan® Leather Straight Check Straps assures smooth shuttle throw

Positive *follow-thru* is necessary for smooth shuttle throw with no bounce. To get this "live-stick" action with proper boxing and uniform shuttle flight on every pick, many textile men prefer Hairitan Straight Check Straps. Their low permanent stretch and high degree of resiliency mean top performance over long periods without down-time. Note how the Hairitan Straight Leather Check Strap flexes back as the stick draws it through the fingers — forms a "cushion" which receives the stick upon its return and gently slows its flight to a perfect landing at the end of the lay.

Orange Line loom leathers are engineered for that particular job which they are to perform, assuring the user of greater production with less maintenance. G&K-Dixie produces more than 50 types of loom leathers for use with Draper and Crompton & Knowles Looms.

CATALOG presents the complete line of Textile Leathers for weaving — also aprons and tapes for the woolen and worsted industry. Ask for a copy, on your letterhead.

CUT SHUTTLE COST
(No hot spurs)
STOP KINKY FILLING
(No shuttle-bounce)
REDUCE BANG-OFF
(Perfect boxing)
INCREASE PROFITS

These photographs were taken from the underside of a Draper X2 Loom operating at 175 picks per minute. Each picture was taken in 1/20,000 of a second. Note the punishing flexing these Hairitan Straight Check Straps must withstand. Their long life on this difficult job comes only from the scientific treatment given specially selected hides (hair-on and hair-off) resulting in high tensile strength with low permanent stretch. Made in all standard lengths and widths in single-ply 3/16", 7/32", 1/4", 9/32"; two-fold 5/16", 3/8".

second century G and K Orange® Line **Textile Leathers**

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High Speed **TRICOT** MACHINES

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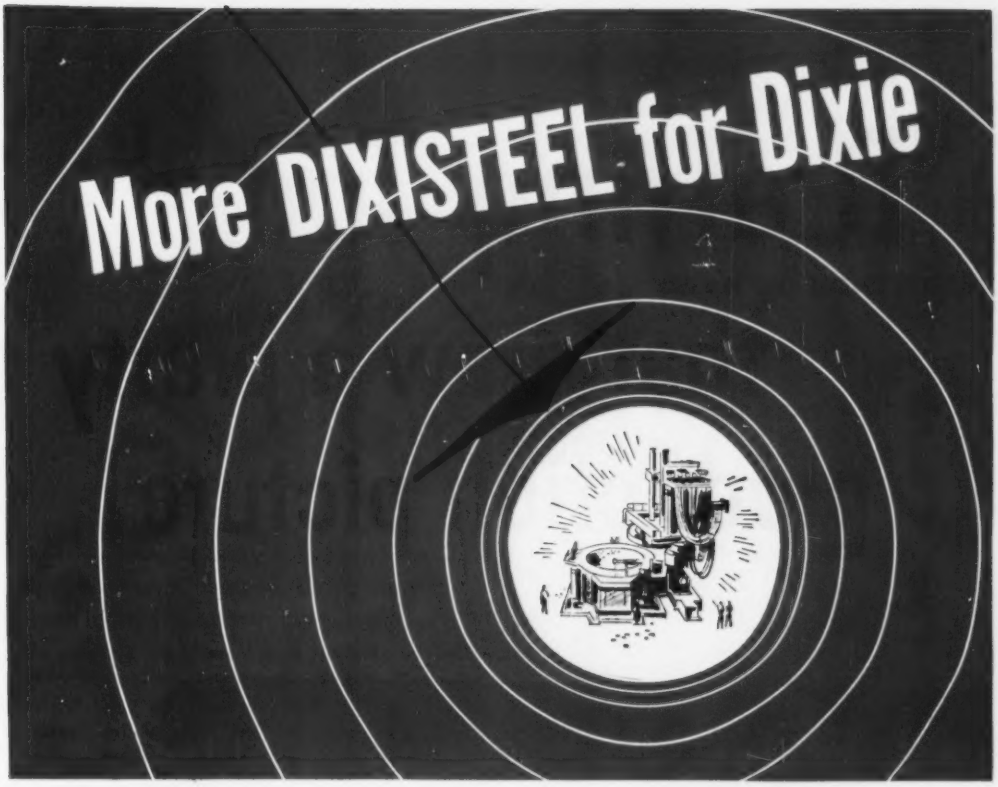


Southeast's Largest Electric Furnace To Increase Our Steel Output by 50%

DIXIE'S LARGEST ELECTRIC FURNACE

- Uses as much electricity a day as a city of 10,000 population.
- Makes a heat of steel in about 4 hours, compared to 8 hours or more for an open hearth furnace.
- Can be fully charged in less than 30 minutes, or 7 times as rapidly as an open hearth furnace of the same capacity.
- Requires no pig iron for producing low-carbon steel—uses scrap alone without impairing quality.
- Is equipped to produce high-carbon, special strength alloy steels, including stainless.

TO MEET the growing demands of national defense and civilian needs for more steel, we are proud to announce the addition of the Southeast's largest electric furnace to our steel-making facilities.

This new, 60-ton giant will increase our output of steel ingots by 50%, resulting in a corresponding increase in the production of steel products bearing the name "DIXISTEEL."

This one new, ultra-modern furnace will produce half as much steel as our present three 75-ton open hearth furnaces, which produced over 200,000 tons of steel ingots in 1951.

Now more than 300,000 tons of DIXISTEEL will annually find its way into the hands of our customers throughout Dixie, many of whom we have served for more than a half-century.

Atlantic Steel Company

MAKERS OF DIXISTEEL SINCE 1901

ATLANTA, GEORGIA • EMERSON 3441

For more information, write direct or use Reader Service post card.

"Drafting Tools" that draw a pretty production picture!

THE NEW, IMPROVED DAYCO COT

HIGHER FIBER REPELLENCE!

CUTS LABOR COSTS!

STOPS TIME-OUTS FOR ENDS-DOWN AND LAP-UPS!

If you're using ordinary cots now, look for *years* of extra cot life, when you switch to Dayco! For this new "spinner" gives even more service than the former Dayco Cots — and *they've* become famous throughout the textile industry for exceptional life.

The improved fiber repellence of the new Dayco Cot means fewer lap-ups, fewer ends-down, cleaner yarn. And talk about versatility — you can use it on cotton, wool, blends or synthetic fibers!

An entirely new compound of American Rubber goes into this new Cot, to give you non-stop performance that slashes the non-productive labor costs of handling ends-down, lap-ups. Try the new Dayco Cots on your frames, and see for yourself!

THE DAYCO LONG DRAFT APRON

SPEEDS PRODUCTION!
SAVES STARTING TIME!
CUTS MAINTENANCE COSTS!

Single Apron System

Two Apron System

Even on Monday mornings, you just turn on the power and spin — if your frames carry Dayco Long Draft Aprons! No false starts — no warm-up period before you can start production.

The Dayco Long Draft Apron yields up to 10% more uniform yarn. And you can't match it for precision — caliper it against the best aprons now on your frames, and you'll find the Dayco excels in uniform thickness, diameter, and width. You'll get a perfect fit, too, regardless of age or type of cradle, from Dayton's exclusive method of marking for 2-apron systems.

Try the Dayco Long Draft Apron, and you'll agree with the Overseer who said, "First apron I ever saw, you wouldn't lose a few when starting up!"

Dayton Rubber

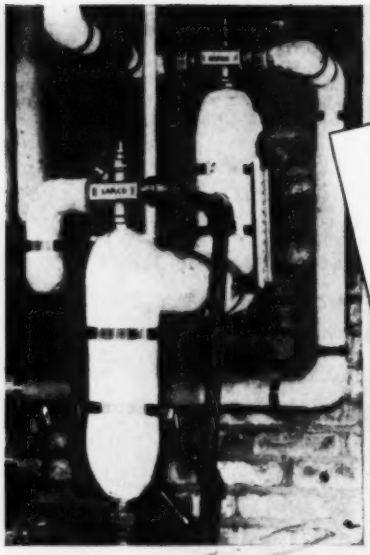
Since 1905

TEXTILE PRODUCTS FOR BETTER SPINNING AND WEAVING

As pretty as a picture is the world's greatest fashion artist — the American woman who graces the lovely fabrics spun and woven in America's textile mills.

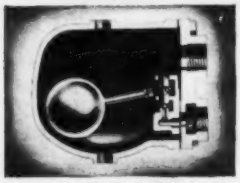
©D. R. 1952

DAYTON RUBBER COMPANY, Textile Division, Woodside Bldg., Greenville, S. C.



Sarco makes simple, self-acting temperature controls assuring the desired Jacket cooling effect with minimum water consumption regardless of load variations.

Sarco type TR-40-L Cooling Control-Jacket water temperatures never too hot or too cold.



Sarco type FA Drain Traps have four pressure ranges to 750 psi. Sizes ¾" or 1".

IS YOUR AIR COMPRESSOR CAPACITY EFFECTIVE?

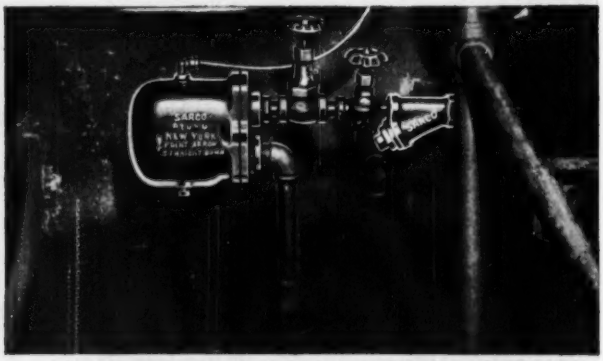
The true measure of effective air compressor capacity is the useful work done by your compressed air.

Measured by this yardstick, many compressor installations are very much oversize for the work they do.

Apart from poorly designed piping, the trouble usually lies in wet air, overcooling, undercooling, choked intake filters, etc. All of these things add up to expensive compressed air and high maintenance costs.

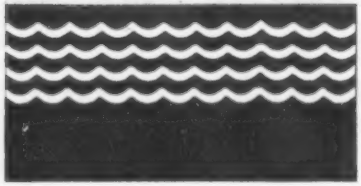
New Technical Bulletin, No. 5-CA, is designed to help users and would-be users of compressed air to get more work from their machines at less cost.

Write for your free copy today.



Sarco type FA compressed air trap automatically removes separated water from the bottom of the receiver. This greatly reduces the possibility of water being carried down the distribution lines to cause trouble in the tools or at the air nozzles. This trap is also used to drain water from separators and the low points of distribution lines.

343

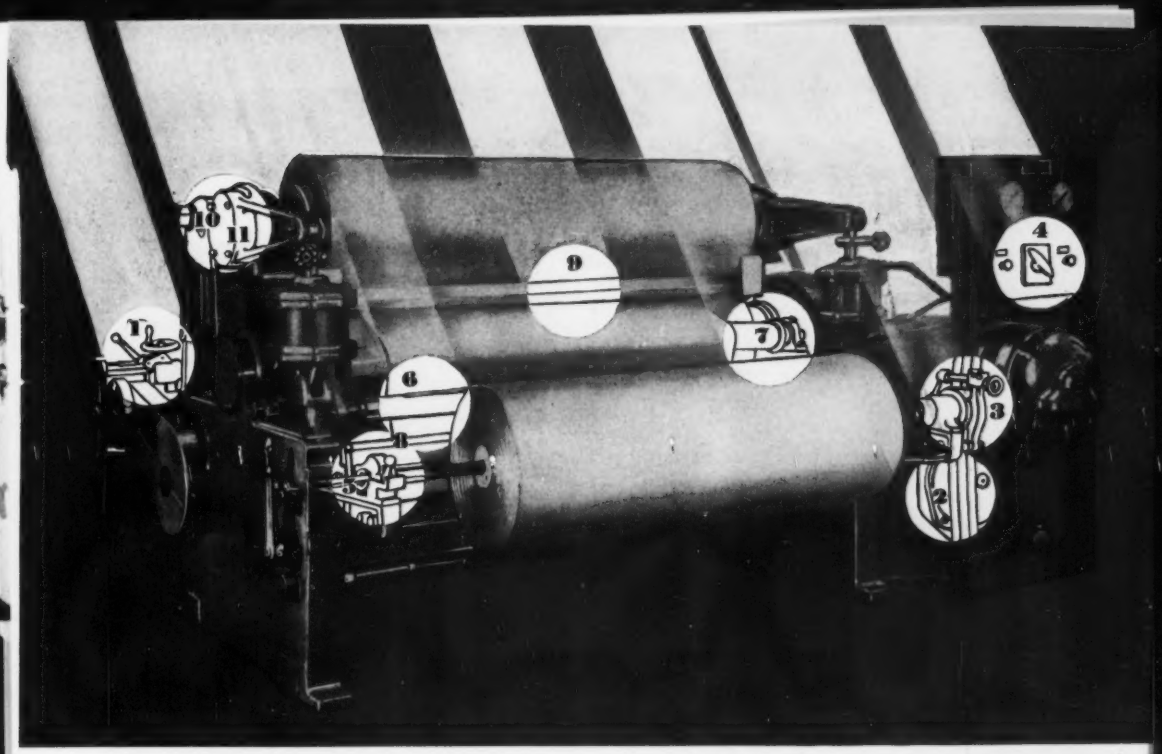


SARCO COMPANY, INC.

EMPIRE STATE BUILDING, NEW YORK 1, N. Y.

Represented in Principal Cities

SARCO CANADA LTD., TORONTO 5, ONTARIO



SPOTLIGHT ON SUPERIORITY

Focus your attention on these points of superiority. They will stand out in the light of your experience in processing modern fabrics.

1. It has an entirely new slip clutch take-up. Operates through dual friction plates with sensitive tension control and quick acting engage and disengage lever.

2. Variable speed drive, coupled to worm gear reducer, gives quiet, smooth operation and saves considerable floor space.

3. Malleable iron block brakes have tension indicator for easy reading and brake shoes are independently mounted for smoother action.

4. Pneumatic pressure system controls each cylinder separately, allowing operator to equalize nip pressure.

5. Both let-off and take-up bars have positive center bar locks.

6. All guide rolls are mounted on anti-friction bearings and made of stainless steel.

7. Two rubber covered expanders with sealed ends are provided.

8. The stainless steel pan can be easily and quickly lowered for cleaning.

9. Splash guards and nip guard assure safe, clean operating conditions.

10. Padder rolls are mounted on spherical roller bearings for smooth trouble-free service.

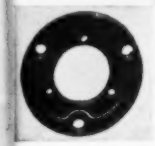
11. Both rolls are easily removed.

VAN VLAANDEREN

You are invited to see this machine.

HAYES giant NEW section beam

36" HEAD



Hayes 36" Section Beam 54¼" between heads — Weight only 258 lbs. As shown; for Reiner warper. Adapters for Sipp-Eastwood and Cocker Warpers Illustrated.

...holds 50% more yarn than 30" beam

PROVEN IN USE

Proof of the cost-cutting job Hayes beams will do is their record of acceptance in little over four years. Today over 50,000 Hayes light metal beams are in the textile industry.

A SIZE TO FIT YOUR NEEDS

You can obtain Hayes aluminum and magnesium section beams in 26", 28", 30", 32" and the new 36" head diameters. The new giant beam carries a huge yarn load — 50% more than 30" beam — for longer uninterrupted runs.

TRICOT AND LOOM BEAMS, TOO

You can also have the profitable advantage of light metal in tricot beams for rayon and nylon fixed or adjustable head loom beams, and in loom beam replacement barrels for use with cast iron heads. All are engineered for *cost-saving production*, by Hayes.

BRING YOUR BEAMING PROBLEMS TO HAYES

Let the advantages of Hayes beams work for you. Plan now to convert, through normal replacement, to Hayes light metal beams. Hayes field engineers will be pleased to work with you in planning an economical change-over.

NOW FIVE SIZES . . . choose to fit your production needs

CUT COSTS . . . Hayes light metal beams have a cost advantage

- ***They cut shipping and handling costs*** . . . because they weigh one-half or less than conventional beams.
- ***They cut production costs*** . . . because their balanced true running rigid heads and barrels give uniform selvages and permit faster speeds.
- ***They cut reject costs*** . . . because of their rust-free, snag-free polished heads and barrels.

Write for information and the Hayes Catalog No. 100

HAYES INDUSTRIES, INC.

HOME OFFICE: Jackson, Michigan

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NUMBER 3 OF A SERIES

How Gulf Periodic Consultation Service helps textile mills cut lubrication and maintenance costs

PRACTICAL SIMPLIFIED LUBRICATION CHARTS PROVIDED

A logical source of information and help on any problem that involves lubricants or lubrication is a trained Gulf Lubrication Engineer. You'll find he does more than simply recommend the proper oils and greases for every type of equipment in your mill. He offers effective help on every phase of lubrication!

After he has completed a survey of your plant equipment and operating conditions, for example, he will offer two types of lubrication aids. The first, a master lubrication chart in book form which is to be retained in the maintenance office, contains an itemized list of all your equipment together with recommended Gulf lubricants and the methods of application. The second, a group of plastic bound wall charts, is provided for each department or section. These durable charts are used in the department or section to which they apply.

This system has proved to be very practical without being cumbersome—the oilers have a permanent, convenient reference chart near the point of lubricant application, and their supervisors have an effective means of controlling the overall picture and of checking such factors as number of different lubricants in use.

This is just one phase of the plan known as Gulf Periodic Consultation Service. For additional information and for expert help on any specific lubrication problem, call in a Gulf Lubrication Engineer today.

GULF SERVES INDUSTRY

Gulf Oil Corporation · Gulf Refining Company

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Please send me, without obligation, a copy of the booklet "Gulf Periodic Consultation Service."

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Company.....

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For more information, write direct or use Reader Service post card.

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for performance . . .

. . . NOT SPECULATION

when you specify PERKINS Rolls. PERKINS Rolls have behind them the longest and broadest experience in the Roll-making industry.

B. F. PERKINS & SON, inc.

Engineers and Manufacturers

HOLYOKE • MASS.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

with MANHATTAN RUBBER COVERED ROLLS

Downtime for roll troubles due to oxidization, hardening, corrugating, cracking, or separation of rubber from the metal core is virtually unknown in Manhattan rubber covered rolls • Manhattan specialists are continually improving production methods and conditions in order to apply rubber covering that will meet any demand for high speed, permanent density, etc. Your costs go up when you have to stop production to change rolls. Manhattan Rolls last longer and lower your costs • Call in a Manhattan roll engineer.

ROLL COVERING PLANTS AT PASSAIC, N. J. . . . NEENAH, WISCONSIN . . . NORTH CHARLESTON, S. C.

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

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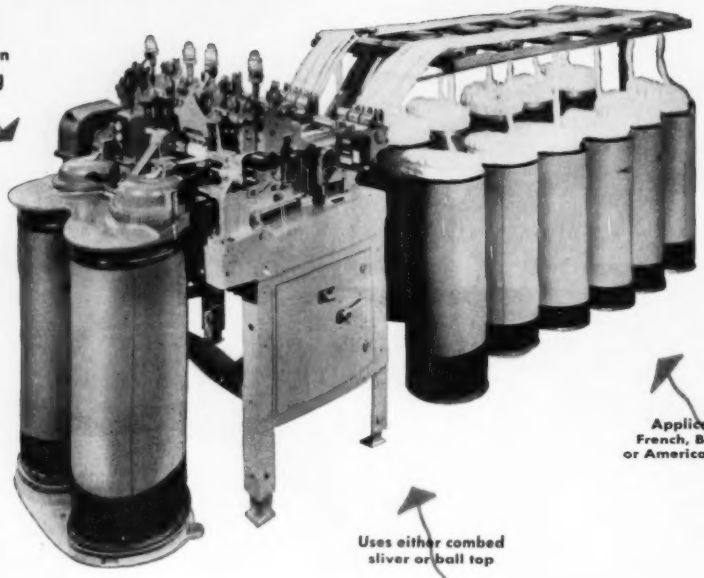
WARNER & SWASEY

Pin Drafter


Produces better, more evenly blended sliver in greater volume
Eliminates costly steps in preparation of sliver for roving
Applicable to French, Bradford, or American systems
Uses either combed sliver or ball top
Reduces waste

Creeling cut in half behind reducer

Another Pin Drafter Profit Story...

UNDER the old system, 64 individual packages weighing 5 pounds each were required before the sliver reached the reducer. Since the adoption of the Warner & Swasey Pin Drafter method, only 32 packages of 20 pounds each are required. The 20 pound packages behind the reducing frame run from 8 to 12 hours before creeling is necessary. This, of course, results in a great deal less handling and helps conserve an already short labor supply.

Operational improvements such as this one are just a part of the increased profits you can expect by installing Pin Drafters in your mill. For complete details on how the Pin Drafter fits into your operations, call in our Field Engineer in your territory.

BRANCH OFFICES:
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6910 Market Street, Philadelphia, Pa.
Candler Building, Atlanta, Ga.

WARNER & SWASEY
TEXTILE MACHINERY DIVISION

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY

You be the Judge!

In selecting a new plant location the management of a company faces a serious responsibility. Industrial engineers, plant location specialists and others can supply an array of factual data, but in the final analysis management must make the decision upon which the success or failure of the enterprise may well depend.

We are fully aware of these facts, and we sympathize with management in this problem. In submitting our recommendations for a plant location, we strive insofar as it is humanly possible to put ourselves in the prospect's shoes.

We won't try to make your decision for you, but we will furnish you some mighty pertinent information which will help you in reaching that decision.

Let us submit surveys tailored to your specific requirements. Then:

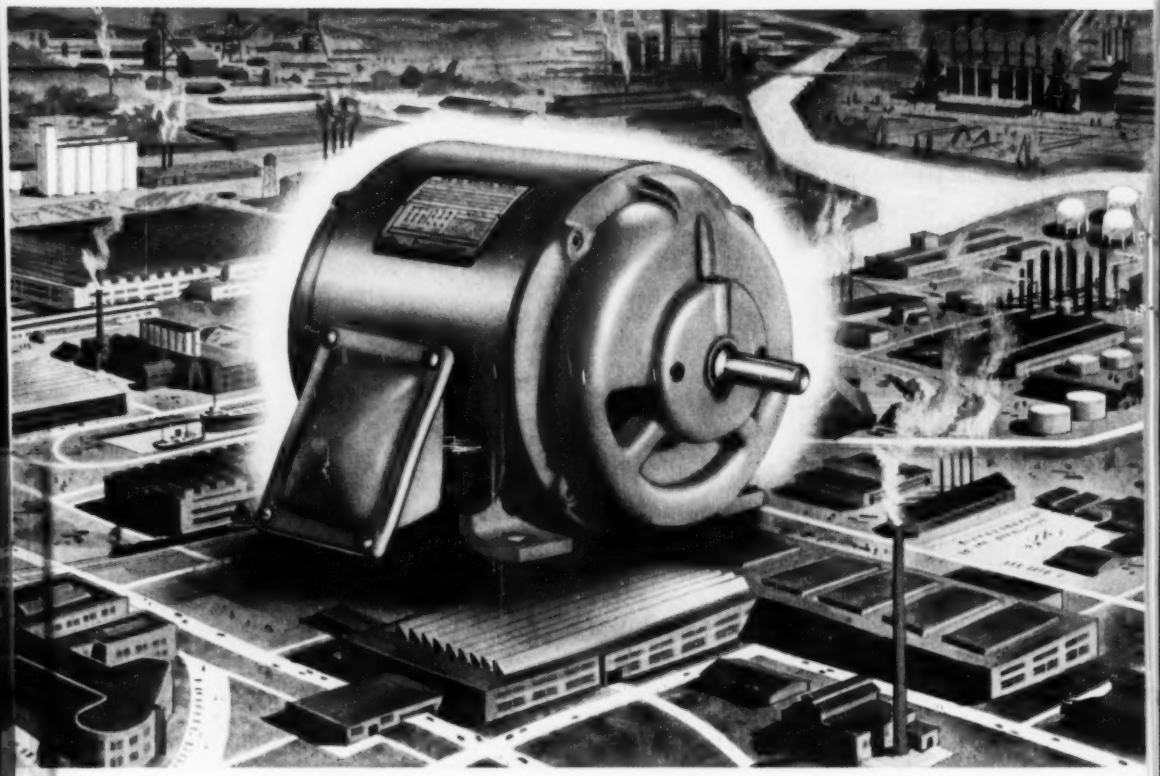
You Be The Judge.

Address: Warren T. White, Assistant Vice President
Seaboard Air Line Railroad
Norfolk 10, Virginia

GROW with the GROWING SOUTHEAST!

SEABOARD AIR LINE RAILROAD

THROUGH THE HEART OF THE SOUTH



Everywhere in Every Industry, this Fact is Being Proved...

"All Motors are not alike"

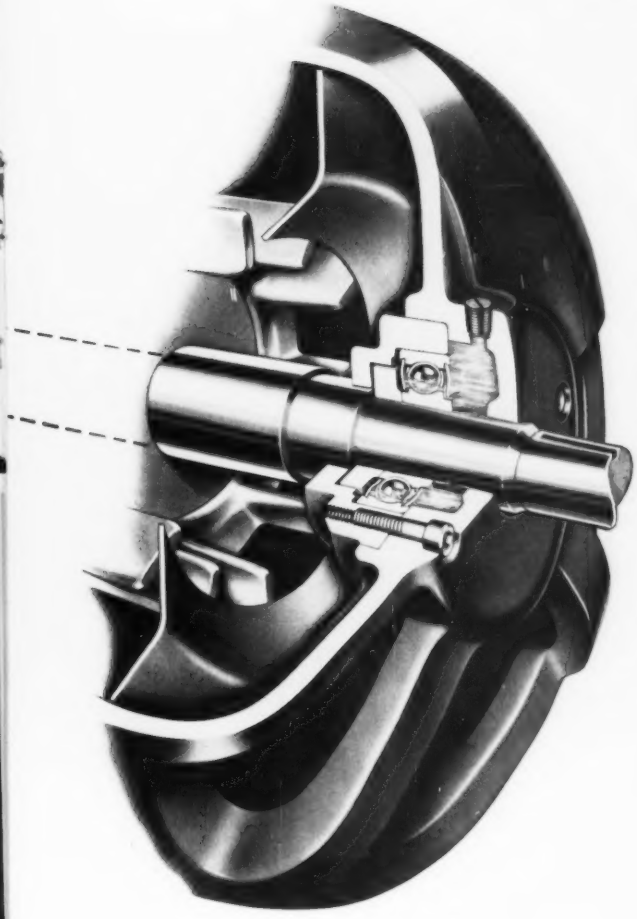
By their superior performance—frequently in rugged 24-hour-a-day service—Reliance Precision-Built A-c. Motors are proving in every industry that *"All Motors are not alike"*. Here are motors which are made differently and made better—to deliver dependable power longer. Their original factory bearing lubrication, for example, provides more operating hours before re-lubrication is necessary than that of any other pre-lubricated bearing. And on the next page you will find a check list of features which combine to make the Reliance design the best pre-lubricated bearing design you can obtain in any motor made today!

RELIANCE
Precision-Built
MOTORS

15 REASONS WHY . . .

the RELIANCE Pre-Lubricated Bearing Design

is the BEST in Electric Motors



- Bearing sealed from dirt and other foreign material.
- Enclosed bearing housing.
- Bearing can be re-lubricated without being disassembled.
- Motor can be re-greased without removing drain plug.
- Automatic grease relief to suit any lubrication system.
- Protection against grease entering windings.
- Balls free of direct pressure during lubrication.
- Bearing can be removed without danger of distortion.
- Reservoir to protect against under-greasing.
- Standard commercial ball bearings.
- Larger grease reserve than provided with any standard bearing.
- Grease supply free of churning action.
- Measuring unnecessary to prevent over-greasing.
- Unnecessary to grease equally at each side of ball race.
- Lubricant is retained in ball race.

Write for Bulletin detailing all of the advantages you get with the RELIANCE Pre-Lubricated Bearing Design

Cutaway views, comparison chart and statements by bearing manufacturers offer more complete evidence of the superiority of the Reliance Pre-Lubricated Bearing Design. Specify Bulletin B-2201.

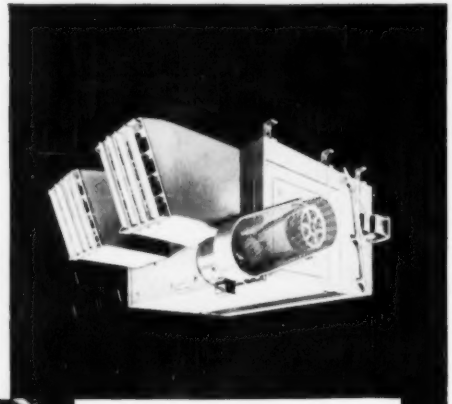
Reliance PRECISION-BUILT A-c. Induction Motors available from 3/4 to 300 horsepower

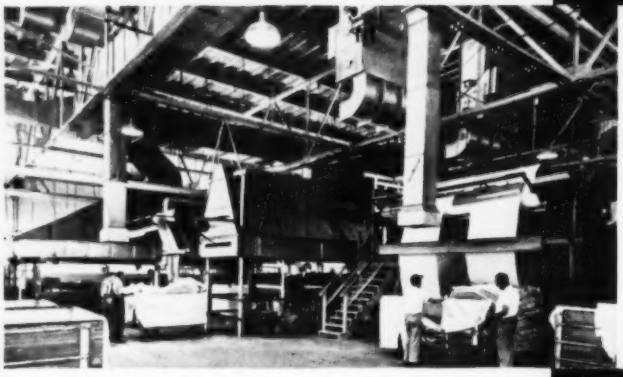
Sales Offices in Principal Cities

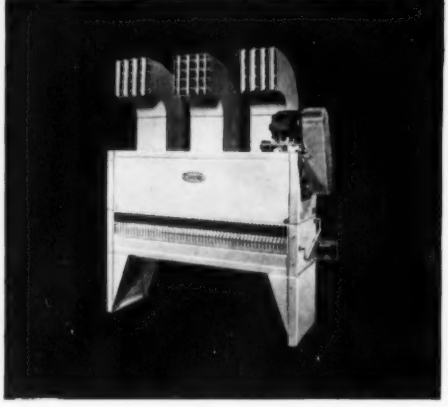
RELIANCE ELECTRIC AND ENGINEERING CO.

1086 IVANHOE ROAD, CLEVELAND 10, OHIO • CANADIAN DIVISION: Welland, Ontario

Put Carrier in your dyehouse— and keep trouble out!







Damp spots, fog, condensate on walls—all damaging troublemakers in any dyehouse. But they'll never get a hold in your dyehouse if you're equipped with Carrier blower-type Heat Diffusers.

Carrier Heat Diffusers bring in fresh outside air, warm it to exact temperatures and circulate it. Every corner of the dyehouse stays safely *dry*. Carrier engineered and built, these Heat Diffusers are your guarantee of low-cost, reliable heat and dependable service always.

By the way, we've a handy catalog—"Air Conditioning for the Textile Industry"—which is yours for the asking. Just write Carrier Corporation, Syracuse, New York.

Carrier Blower-Type Heat Diffusers 46P, Q, R are rugged performers on other mill jobs, too. They ventilate as well as heat, and they're built in sections that install easily and change quickly. If you're expanding, they'll keep right in step with your changing needs. Ceiling, wall or floor mounted, they discharge warmed air in just about any direction through multiple outlets with adjustable louvers. For steam or hot water, in 6 sizes, to 2,390,000 Btu per hr. at 2 lb. steam, with air-handling capacities up to 51,000 cfm.

The Industrial Heating Equipment Industry is proud of the recognition accorded it by the armed services and procurement departments of the United States Government. Proven in grueling use during World War II, industrial heating units are now standard equipment in ships, plane hangars, living quarters, garrison buildings—wherever reliable, efficient heat is necessary for the completion of a task or the well-being of our fighting forces. On the home front, industrial heating units serve equally important roles in industrial plants producing war material supplying the needs of the allied forces.

Carrier

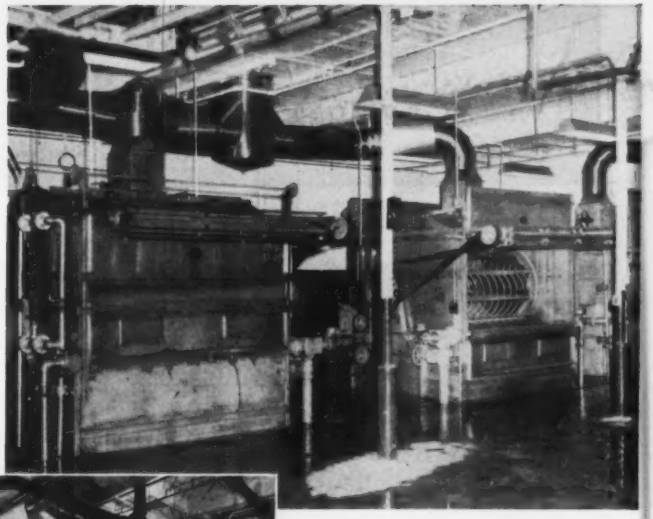
AIR CONDITIONING / REFRIGERATION / INDUSTRIAL HEATING

HUNTER Equipment Safeguards Quality Production at *Packard* Mills

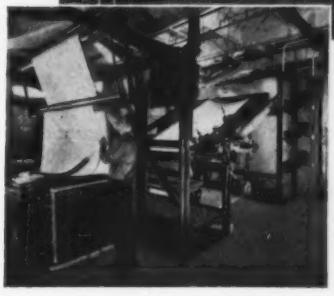
Packard Mills, like many other prominent, quality-conscious fabric manufacturers, attain and safeguard their high production standards with dependable, superior Hunter equipment. At the Packard plants in Webster and Caryville, Massachusetts, Hunter Cloth Soapers, Fulling Mills, Cloth Washers, Carbonizers, Scutchers, Squeeze Rolls, Tenter Dryers, Stock Extracting and Drying Equipment, and Dye Kettles are constantly meeting exacting performance specifications . . . playing a vital part in the making of Packard's nationally-known fine woolens.

Hundreds of plants throughout the world also have daily evidence that Hunter's sound engineering and skilled craftsmanship reduce to an absolute minimum the costly, wasted down-time for repairs and parts replacement . . . giving profit-making "plus production" of greater output at less cost!

There's a technically trained Hunter field engineer near you qualified to make recommendations concerning your specific problems. ★ ★ ★ ★



Above: Photo shows Hunter Dye Kettles installed at Packard Mills. (Send for BULLETIN SK for complete information.)



Above: The Hunter two-section Uniflow Tenter Dryer in operation at Packard Mills. (BULLETIN UTD contains full information.)

- COTTONS
- BLENDS
- WOOLENS
- SYNTHETICS

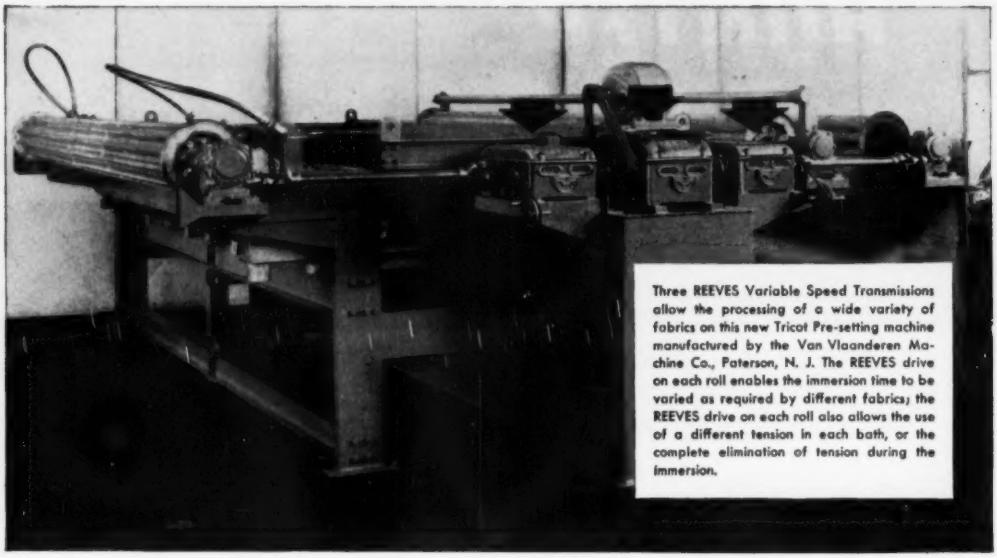
Hunter specializes in the design and construction of modern wet finishing, dyeing and drying equipment for processing cottons, blends, woolens and synthetics. Write us today for complete technical bulletins on the many Hunter "plus production" units that can make your operation more efficient ... more profitable!

JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ... IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS.

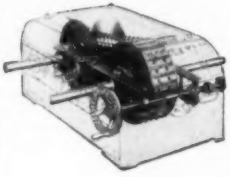
NORTH ADAMS, MASSACHUSETTS FOUNDED 1847



Three REEVES Variable Speed Transmissions allow the processing of a wide variety of fabrics on this new Tricot Pre-setting machine manufactured by the Van Vlaanderen Machine Co., Paterson, N. J. The REEVES drive on each roll enables the immersion time to be varied as required by different fabrics; the REEVES drive on each roll also allows the use of a different tension in each bath, or the complete elimination of tension during the immersion.

REEVES Variable Speed Transmission

Operating Principle



REEVES Variable Speed Transmission embodies the proved operating principle of a V-belt driving between two pairs of cone-shaped discs, mounted on parallel shafts and adjustable to form an infinite number of driving and driven diameters. One shaft receives power at constant speed from motor, line shaft, etc. Other shaft delivers power at infinitely variable speeds to driven machine. Each speed setting is held without fluctuation. Operation is practically noiseless.

REEVES PULLEY COMPANY · COLUMBUS, INDIANA

Recognized leader in the specialized field of speed control engineering

accurate · variable
REEVES *Speed Control*

The textile industry's most widely used unit for adjusting machine speeds here's why:

1 Incorporates the REEVES operating principle—proved in 300,000 installations—which assures *accurate, positive* delivery of any desired speed within the entire speed range, without stopping the machine.

2 Makes "changeovers" easier—utilizes the machine's *full* capacity—by providing the *right* speed—with the turn of handwheel or touch of button—for every operation and every operator, under every changing condition.

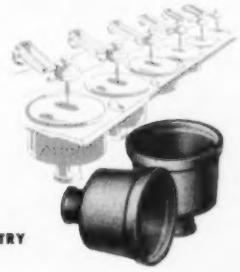
3 Wide choice of vertical and horizontal models—capacities up to 87 hp; in speed ratios as great as 16 to 1; manual, electric, hydraulic or completely automatic controls; suitable for mounting in any position.

4 Easily installed on your machines. Ruggedly constructed with few moving parts subject to wear . . . requires no special tools or training to maintain.

Profit from REEVES Speed Control in your mill—*see immediate results.* Send for full details on REEVES Speed Control—ask for catalog No. W 74a-G.

micarta is basic!

In many places in your production



TEXTILE INDUSTRY

Lap rolls, pirns, picker-sticks, shuttles . . . MICARTA® is handling more and more of these key textile jobs better and longer than either metal or wood. MICARTA is a basic material. It is lighter than aluminum . . . pound for pound this plastic has a compressive strength greater than structural steel. It cannot rust.

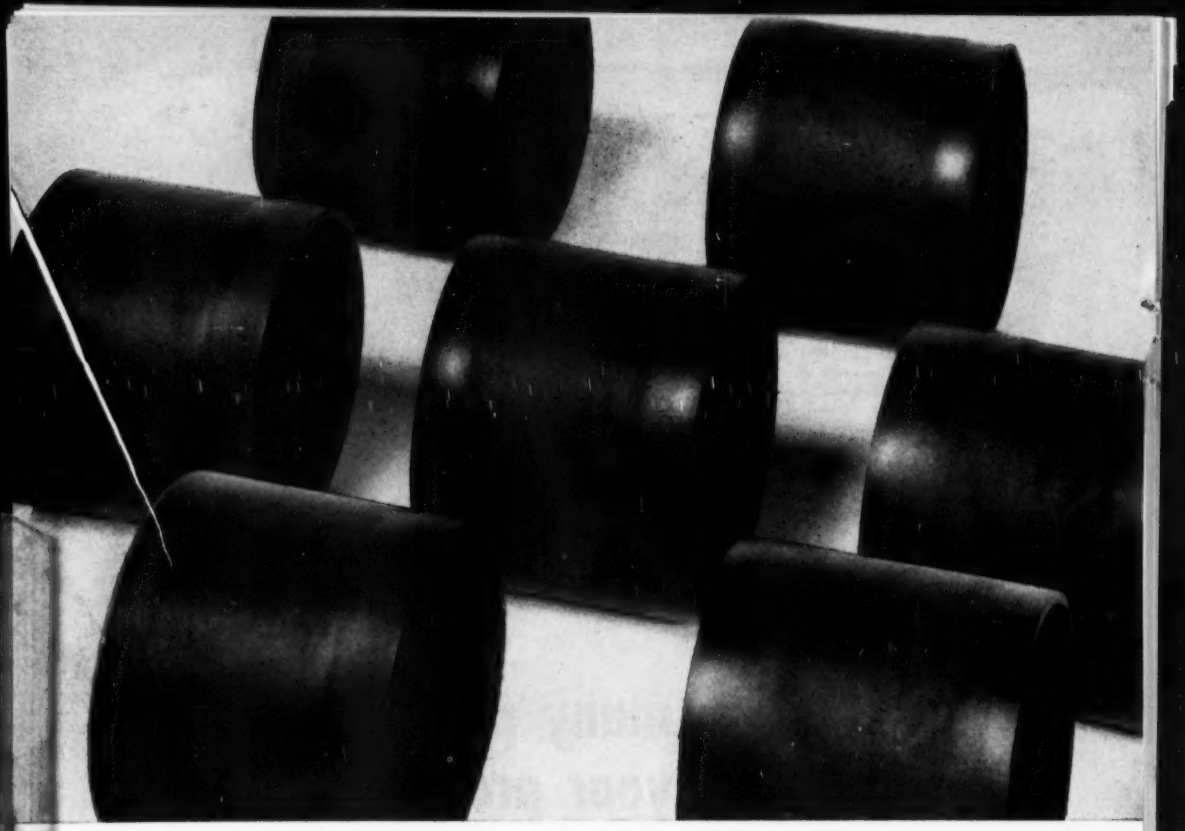
MICARTA will not fuse. It kills noise and absorbs vibration. It can be machined, formed or fabricated easier and more economically than metal.

MICARTA is part of the textile future. Explore its possibilities in your plant. Westinghouse Electric Corporation, Micarta Division, Trafford, Pennsylvania. J-06444-A

MICARTA is paying its way. As a basic material it can serve the textile industry in rings, separators, guide rollers, spools, bobbins, shuttles, rolls, bearings, inspection forms and tables, pulleys, picker-sticks.

In fact, wherever tough, light and even-wearing parts are a "must" to production, there you will find a place for versatile MICARTA.

For more information, write direct or use Reader Service post card.



These aprons ran more than eight years

Aprons like them may give you up to twice the apron life you now get

If you're interested in longer apron life, the picture at the top of this page will tell you its own story. It's from an unretouched photograph. It shows some of the Accotex® Aprons taken from a leading Georgia mill after they had run eighty hours a week, continuously for 8 years and 4 months.

These aprons show wear, of course. After all, they've rubbed over the nose bar millions of times and turned out a lot of work. Yet notice how smooth they are, how free from surface cracks. Notice, too, that there's no sign of stretching, no curled edges. In fact, these aprons will still fit snugly on the mandrel on which they were made.

Outstanding service like this is not unusual with Armstrong's Accotex Aprons. For you, it means that if you are not already using this modern synthetic apron, you should be able to increase apron life up to twice what you now get.

Accotex Aprons wear well and run well because of their patented three-layer construction.

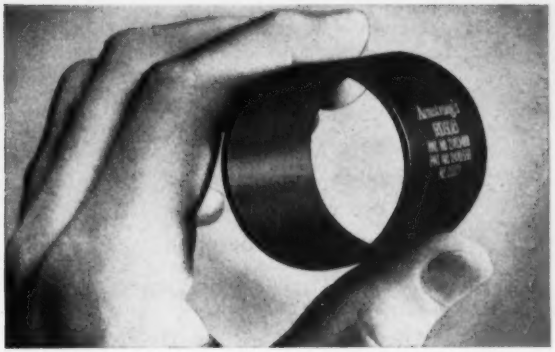
The smooth outer drafting surface is made of a specially compounded synthetic rubber. This rubber is extremely scuff resistant. In addition, it is given a patented treatment that gives it the satiny smooth finish that's typical of an Accotex Apron. That surface won't crack or become oil soaked even after years of service. It's truly clean running.

Next is the interliner, made of tough cord. It's the reason Accotex Aprons won't stretch in service, as proved by the photo above.

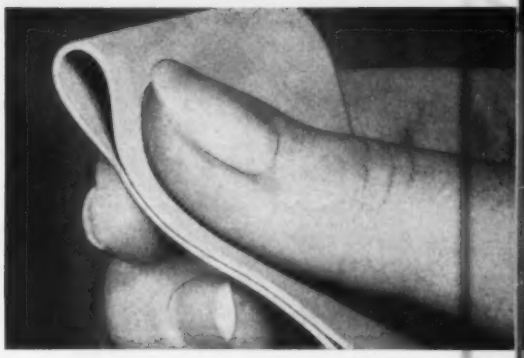
Finally, there's the inner layer, also made of tough synthetic rubber. It is compounded to resist abrasion. Vulcanized together with the other two layers, the result is an apron that drafts well, runs clean, and lasts a long time.

Accotex Aprons are made to fit all long-draft equipment. Call your Armstrong representative to arrange a test installation or write Armstrong Cork Co., Textile Products Department, 8305 Arch Street, Lancaster, Penna. Available for export.

SATIN SMOOTH. Rub your fingers across the surface of an Armstrong's Accotex Apron. You can't beat it for smoothness, and you can depend on it to *stay* smooth.

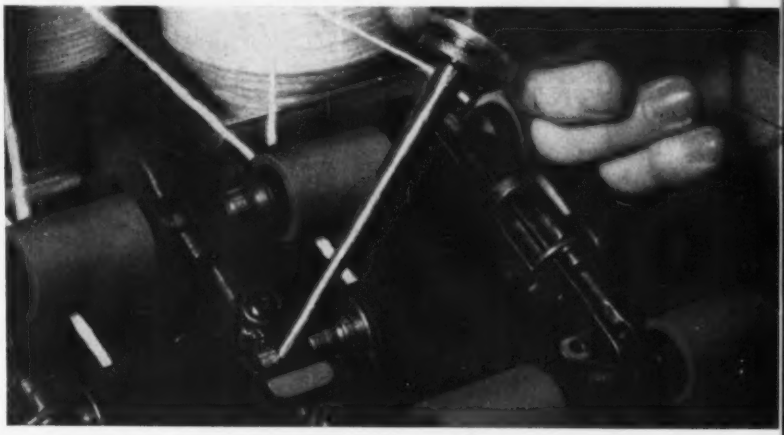


NO SEAMS. Inside and out, Armstrong Aprons have no seams to cause irregularities in the yarn. Seamless construction insures against breaks or cracks.



SUPER-FLEXIBLE. Accotex Aprons give you the extra flexibility so necessary on single-apron systems if they are to hug the nose bar closely.

OIL RESISTANT. Accotex Aprons don't absorb oil or soften from exposure to oils, dyes, and commonly used textile solvents. They won't sweat under any normal mill condition. This, plus the patented Armstrong treatment, gives you aprons that run clean year after year.

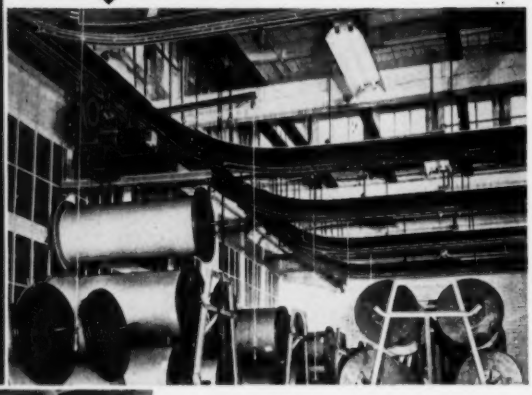


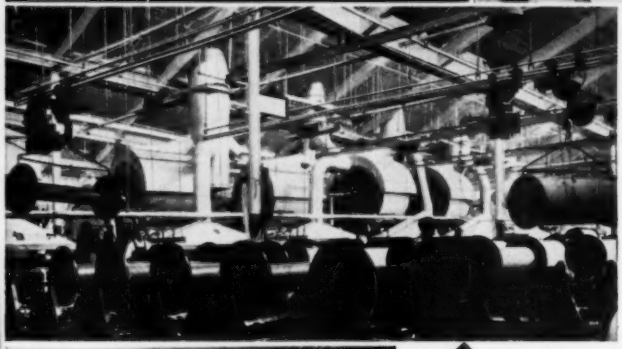
ARMSTRONG'S ACCOTEX APRONS

One of Armstrong's complete line of textile mill supplies

USE AMERICAN MONORAIL *for low cost handling*

Beams easily stored and removed



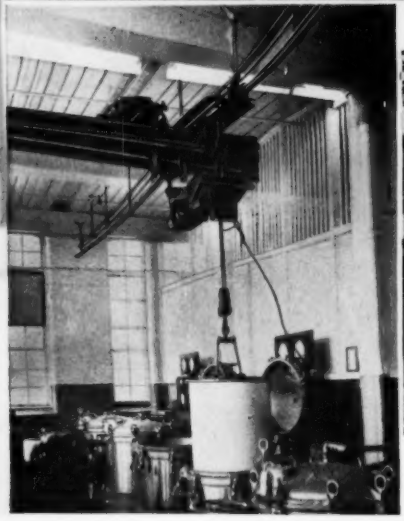


ADVANTAGES-

Low initial cost
no floor wear
covers compact areas
quick installation
use overhead space
automatic operation

Send for Bulletin C-1.

Finger-tip control of slasher beam delivery



Crane covers long loom alleys

MonoTractor crane service dye kiers

THE AMERICAN MONORAIL COMPANY

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Travel clothes for textiles

Your product can also travel "first class" in H & D shipping boxes . . . often with substantial savings in materials, handling and transportation costs. This engineered box, with horizontal score lines to permit adjustable depths, weighs 1/8 as much as the one formerly used.

Give your product every advantage H & D boxes have to offer. Call for an H & D Package Engineer to study your problems and offer his recommendations. For the full story write for the 14-volume "Little Packaging Library." Hinde & Dauch, 5214 Decatur St., Sandusky, Ohio.

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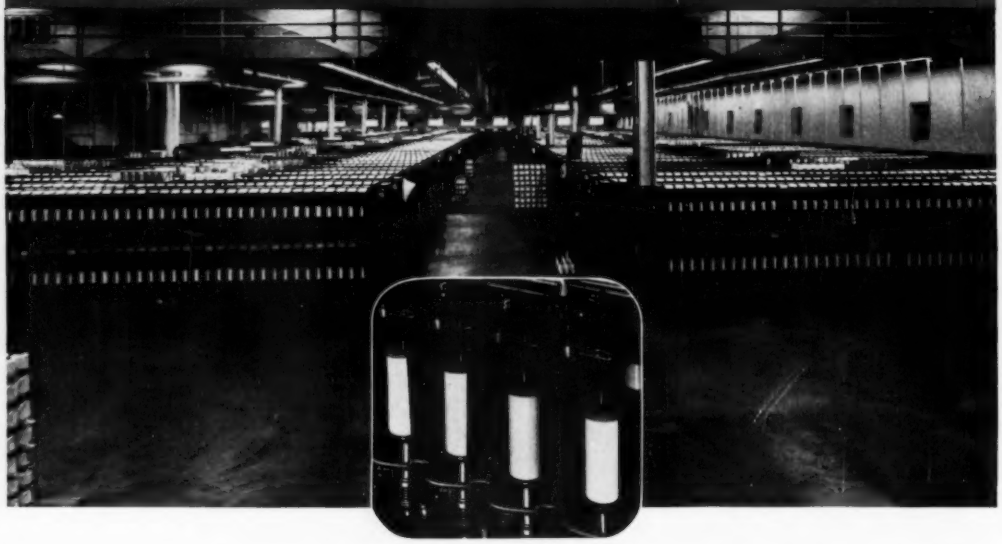
Marquette ROLLER BEARING SPINDLES

with FULL-FLOATING FOOTSTEP BEARING

for all textiles — COTTON — RAYON — NYLON — WOOL — WORSTED



Starting in 1946 with a single test frame of Marquette Spindles, this mill now has more than 21,000 in operation.

Not only here, but *in other mills where they have been tested,* Marquette Spindles have demonstrated their ability to produce MORE YARN at LOWER COST. They operate efficiently at high speeds with large packages, and give important savings in power consumption and maintenance.

We'll be glad to arrange for a test installation to prove that Marquette Spindles can accomplish the same results in *your* mill. Contact our home office or one of our representatives.

The Marquette METAL PRODUCTS COMPANY

CLEVELAND 10, OHIO • SUBSIDIARY OF CURTISS-WRIGHT CORPORATION

Representatives: C. H. WHITE, 2300 ROSWELL AVE., CHARLOTTE, N. C.; WILLIAM P. RUSSELL, BOX 778, ATLANTA, GA.
JOHN J. HALLISSY, 58 LIVINGSTON AVE., LOWELL, MASS.; HARRY KING, GREENVILLE, S. C.

1. Longer bath life
2. Objectionable odors minimized
3. More uniform finishes
4. Better fabric performance

CATALYST AC...

RIGHT START for a FINER FINISH

These are reasons enough why more and more textile finishers are using Catalyst AC in urea and melamine resin applications. First of all, resin baths with Catalyst AC have a far longer life than those containing either diammonium phosphate (DAP) or ammonium chloride, remaining stable for more than two days without artificial refrigeration. The results, of course, are economical plant operations, more uniform finishes.

Another important Catalyst AC *plus* is a marked reduction in the formation of objectionable odors, which often develop in the presence of ammonia salts . . . To these qualities, add improved performance (better washfastness, softer hands) and you will see why Catalyst AC is well worth a trial in *your* plant.

Ask for full information on Catalyst AC today. Write MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass.

Table below shows results of an experiment in which relaxation and wash shrinkages were determined. All resin applications and shrinkage measurements at each level of solids applied were made in parallel. (Relaxation shrinkage is that caused by immersing the loose fabrics in water and wetting agent for 30 minutes at 100°F., hydroextracting, and pressing them dry on a flat bed press. Total shrinkage is relaxation plus the additional shrinkage of an AATCC cotton wash.) Each experimental result shown below is an average of three separate application and washing treatments. **The figures clearly indicate that Catalyst AC is superior to DAP in imparting shrinkage control through U-F resin.**

SHRINKAGE CONTROL WITH CATALYST AC AND DAP

Fabric:	All spun viscose.*
Resin:	Urea formaldehyde.
Application Conditions:	Pad, dry 5 minutes at 180°F., cure 5 minutes at 300°F; parallel applications of catalysts.
Testing Conditions:	Relaxation 30 minutes at 100°F., standard AATCC cotton wash; flat bed pressing.
Data Given:	Sums of % Warp and % Filling shrinkages, i.e. proximate area shrinkages.

% Relaxation Shrinkage*

Untreated Control (Av. of 3)	22.8	
	AC	DAP
10.4% U-F (Av. of 3)	9.8	13.6
16.0% U-F	8.9	12.7
22.2% U-F	6.5	11.7

% Cumulative Shrinkage in 1 Cotton Wash*

Untreated Control (Av. of 3)	37.2	
	AC	DAP
10.4% U-F (Av. of 3)	24.0	27.8
16.0% U-F (Av. of 3)	21.1	27.2
22.2% U-F (Av. of 3)	17.4	23.6

(Catalyst AC: 5% product on U-F solids. DAP: 3% solid on U-F solids.)

*Fabric with excessive shrinkage was purposely chosen to demonstrate a significant difference.

MONSANTO
CHEMICALS – PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

What do you do when you don't have the right size v-belt in stock?

1 **Contact your supplier for a replacement**

...and wait for delivery

...wait—and watch production stay at zero

2

Send someone to get the required belt

...and pay your employee while he goes for the belt

...pay through loss of production

3 **Stock VEELOS...**

...and always have the *right size* belt when you need it

...any length can be made up from a 100-foot reel

...inventory is automatically maintained

...available from 350 distributors

GET ALL THE FACTS

This Veelos Data Book gives complete details about construction, installation and uses. Write for free copy of this money-saving book today.

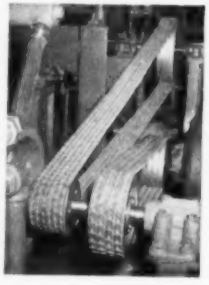
MANHEIM MANUFACTURING & BELTING COMPANY
611 Manbel St., Manheim, Pa.

VEELOS in stock is Production Insurance

Belts for replacement always on hand—just 4 reels of Veelos in the O, A, B and C widths can replace up to 316 different sizes of endless v-belts.

Link construction permits quick installation—without removing outboard bearings.

Adjustability provides controlled tension on each belt—vibrationless, full power delivery is assured.



VEELOS
THE LINK
V-BELT

ADJUSTABLE TO ANY LENGTH · ADAPTABLE TO ANY DRIVE

Made in all widths in three types: regular, oil-proof, static conducting. Also double V in O, A and B. Packaged on reels in 100-foot lengths. Sales engineers in principal cities; over 350 distributors throughout the country. VEELOS is known as VEELINK outside the United States.

CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY

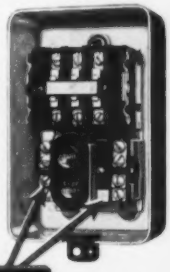
You can judge it by the men who specify it

Cutler-Hammer Motor Control is so frequently the specified choice of mills staffed with able technical men that the record is most convincing. These men know Cutler-Hammer dependability is no mere competitive claim. They know it is the earned advantage of the longest and most intensive specialization in motor control engineering. They have seen its proof stand out clearly in Cutler-Hammer Motor Control performance . . . over the entire range of textile control requirements from the simplest starters to the most complex electronic equipment. These men know *both* motor control and textile production needs. Their continued preference for Cutler-Hammer can mean nothing less than continued satisfaction. Judge Cutler-Hammer Motor Control by the men who specify it!

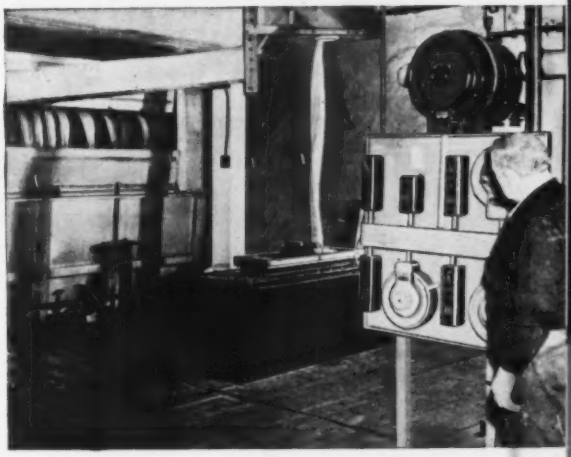
You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER EUTECTIC ELEMENT OVERLOAD PROTECTION

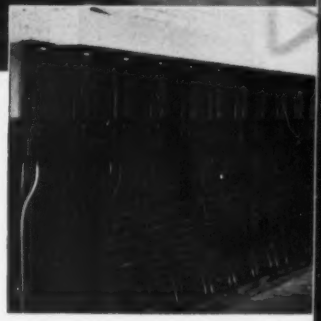
One of the most ingenious and useful inventions of all time, Cutler-Hammer Eutectic Element Overload Protection accurately duplicates, measures and responds to heating effect produced within the motor. The world's most widely used and the world's most dependable motor overload protection, not only permits the motor to work *closer* to capacity in all cases but to do so in perfect safety. A standard feature of Cutler-Hammer Control.



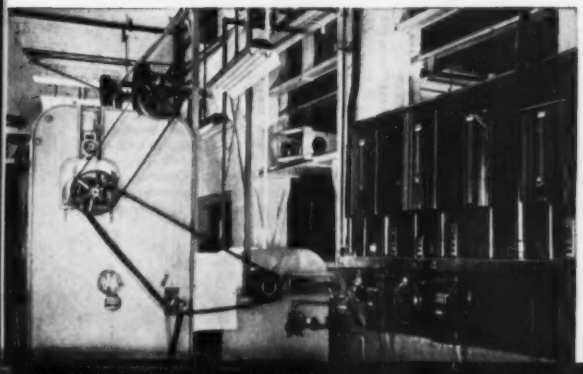
CUTLER-HAMMER
MOTOR CONTROL
C-H



for **PEPPERELL** at Lewiston, Maine, where Cutler-Hammer Control is used at all steps of the continuous peroxide bleaching process.

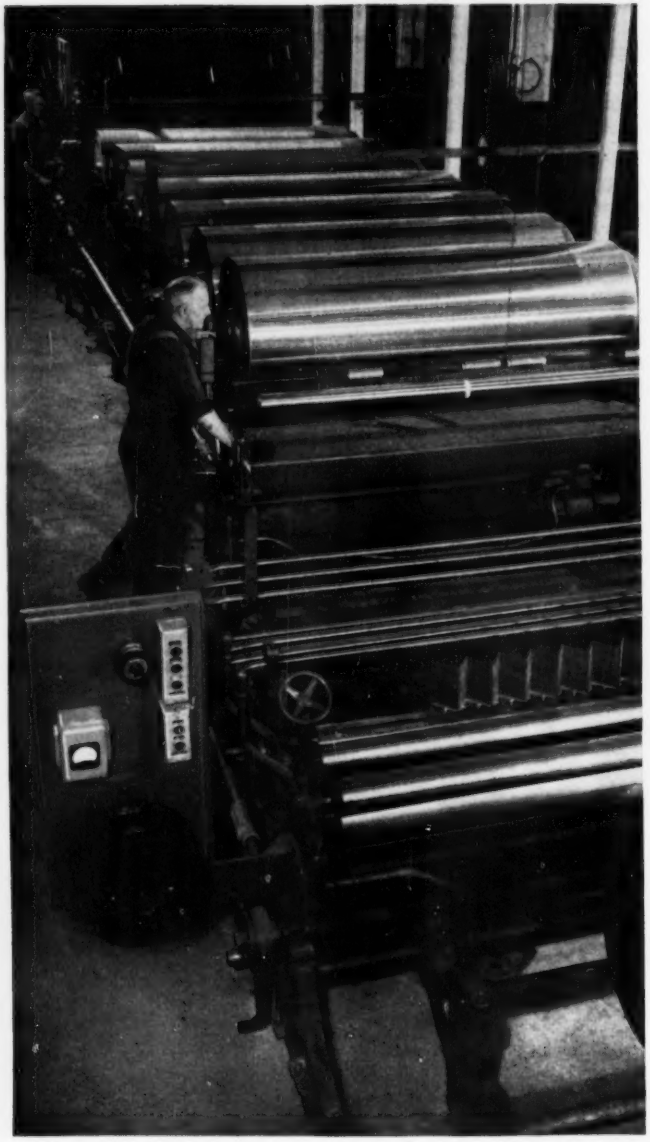


for **EXPOSITION** at Atlanta. Cutler-Hammer Safety Switches and Automatic Starters shown at the right serve the pickers shown above. Cutler-Hammer Control is also used in opening, cleaning, on drawing machines, roving frames . . . on through to the looms in this great mill.



for **CRANSTON** at Webster, Mass. You will find Cutler-Hammer Control on the continuous peroxide bleaching range . . . in fact on all finishing ranges in this plant.

NEW PACKAGED G-E SLASHER DRIVE WINDS MORE YARN PER BEAM



Automatically-controlled warp tension is maintained on this slasher by a G-E packaged slasher drive (control panel in foreground). Soft spots in the beam are reduced and yarn elasticity kept high.

Compact, flexible drive also cuts yarn breaks at large Eastern mill

A new General Electric packaged slasher drive was recently installed at Mohawk Carpet Mills, Amsterdam, N. Y., to size carpet-backing yarn. In this new drive, G-E adjustable-voltage d-c speed control is combined with G-E amplidyne tension control in a single, simple "package." Already the new drive has proven itself—in more yardage on the beam, fewer ends down at the loom!

COSTS LESS—THREE WAYS!

Low first cost: Mass-produced parts reduce unit price.

Low maintenance cost: Filters keep lint out of power unit; all parts are easily accessible.

Low installation cost: Just set the power pack in place and run in the conduit—costly interwiring is eliminated, space saved.

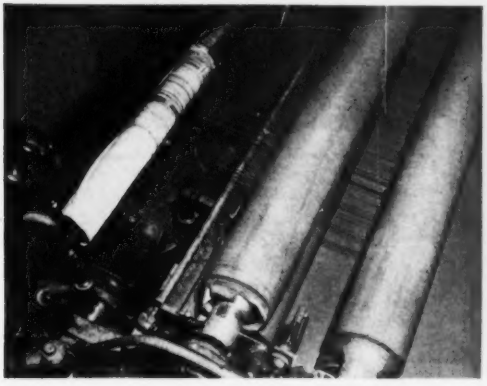
Like to learn more? Call in your G-E Textile Mill specialist. *General Electric Co., Schenectady 5, N. Y.*

PACKAGED SLASHER DRIVES FOR TEXTILE MILLS

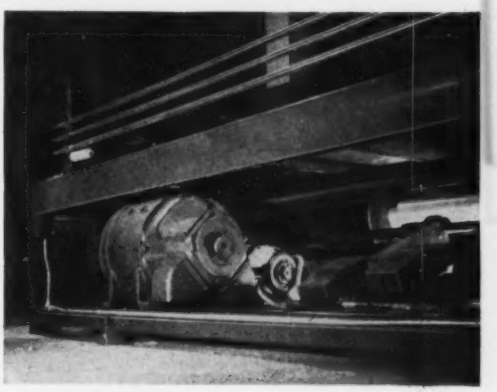
Motor "know-how" for your workers! General Electric's new Motor Selection and Application Course, an easy-to-understand visual program, can help you keep your electric equipment at top efficiency. Shows how motors work, types in use, how to select and apply them. Write for Bulletin GEA-4938-16.

1 **Compact power "package"** contains G-E motor-generator set, amplidyne, booster, exciter, and control panel—needs no special foundation. It supplies d-c power for 4 slasher-drive motors.

2 **Conveniently-located** "Fast-Slow-Stop" push-button station at operator's left is one of several for controlling speed of the entire slasher. Motor shown at bottom is a 3-hp splashproof G-E gear-motor.



3 **Completely protected** against size, this 3-hp totally-enclosed G-E gear-motor (left of size box) drives size box rolls. Speed can be adjusted to stretch or shrink yarn between size box and dryer cylinders.



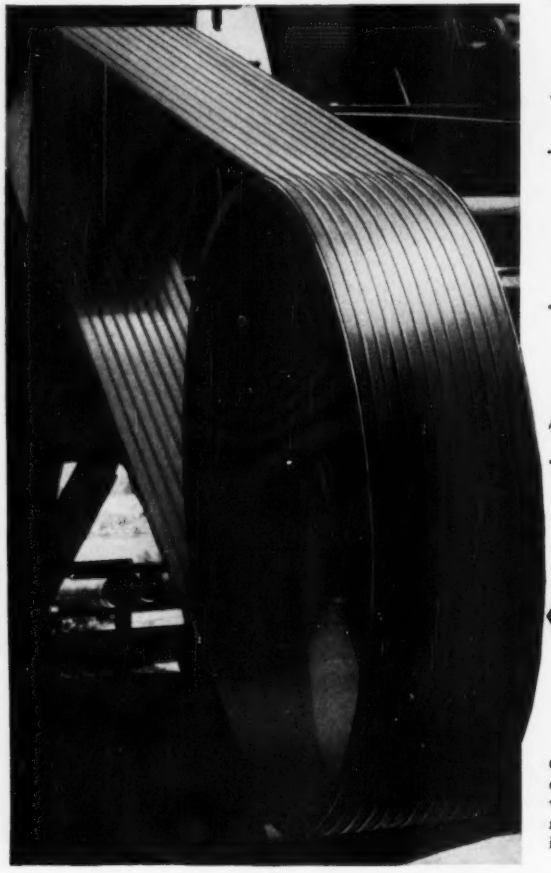
4 **Tension stays constant** as beam builds up—7½-hp splashproof G-E gear-motor changes beam roll speed in response to amplidyne. The 5-hp delivery-roll motor, right, permits desired beaming tension.

GENERAL ELECTRIC

654-23

For more information, write direct or use Reader Service post card.

How to Prevent Premature V-Belt Failure through Correct Installation!



DON'T pry V-Belts over edge of sheaves. (This can *injure* even the toughest belt structure.)

DO adjust take up by moving motor or by other means until belts can be placed on sheaves without pressure.

DO move motor back after belts are placed in grooves until tension is adequate and all belts are tight.

DO SPECIFY Bull Dog V-Belts

...their specially engineered cord section has high tensile strength designed for superior load carrying capacity, the ability to absorb shock loads and share the load equally.

Get the *complete* Bull Dog V-Belt quality story on covers, cords and compounds from your BWH distributor. And while you're about it, ask him about BWH power transmission belting, conveyor belting and hose. We're specialists in making mechanical rubber products work *better, longer!*

Another Quality Product of

BWH — DEPENDABLE RUGGEDNESS

BOSTON WOVEN HOSE & RUBBER COMPANY

Warehouse Stock: 111 N. Canal St., Chicago, Illinois **Distributors in all Principal Cities**

PLANT: CAMBRIDGE, MASS. • P. O. BOX 1071, BOSTON 3, MASS., U. S. A.

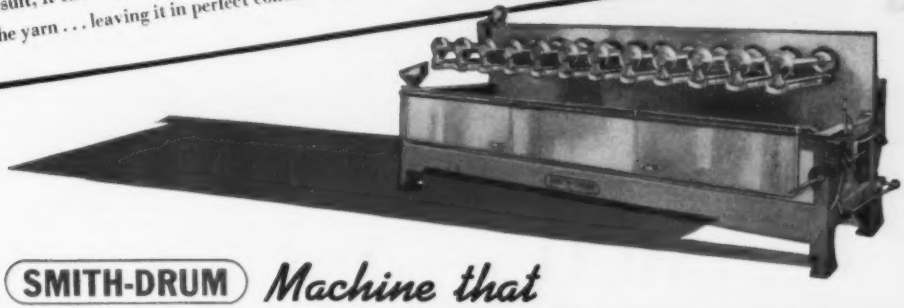
For more information, write direct or use Reader Service post card.

. . . and there's ONLY ONE WAY to Prevent it.

If your present skein dyeing equipment results in snarled yarn or broken filaments, you are incurring needless extra cost and time in back-winding. There is one sure way to end this waste and *only* one . . . install the SMITH-DRUM Type CSD Skein Dyeing Machine.

This is the machine that introduced the principle of "moving the liquor instead of the yarn." As a result, it entirely eliminates tangling or breaking of the yarn . . . leaving it in perfect condition for winding. It also dyes yarn more quickly and uniformly than other methods, resulting in savings of from 10% to 30%. If you dye filament rayon, nylon and other synthetic yarns or fine count cotton yarns in skein form, it will pay you to get the facts on this proven money-saving machine. Write . . .

SMITH, DRUM & COMPANY
432 W. Allegheny Ave., Phila. 33, Pa.



The **SMITH-DRUM** *Machine that*
Moves the Liquor Instead of the Yarn!

NEW! SIMPLER IN DESIGN!

The *IMPROVED* Automatically Self-Cleaning AMCO Atomizer, No. 6

AMCO No. 6 atomizer retains all the time-tested features of the popular No. 5 unit . . . plus additional features which assure improved spray quality. Its better performance and ease of maintenance make this automatically self-cleaning atomizer superior for new installations and replacements.

CONSTRUCTION AMCO No. 6 is made from metals which have proved their resistance to erosion, corrosion and mechanical wear. More rugged construction, fewer parts and greater simplicity in design make servicing easy.

SPRAY A micro-atomizing nozzle produces an exceptionally fine, smoke-like spray which is projected a great distance, intimately mixing with room air. Discharge is adjustable. An entirely new valve action insures positive water shut-off.

SELF-CLEANING The air and water nozzles are automatically self-cleaned each time the compressed air is shut off manually or by humidity control.

AMCO No. 6 conforms to standard specifications. It is interchangeable with AMCO atomizers Nos. 5 and 4 where at least 20 pounds per square inch is maintained on air lines and the water lines are under gravity control.

CHECK THESE PRACTICAL BENEFITS

— yours with

AMCO CONTROLLED HUMIDIFICATION

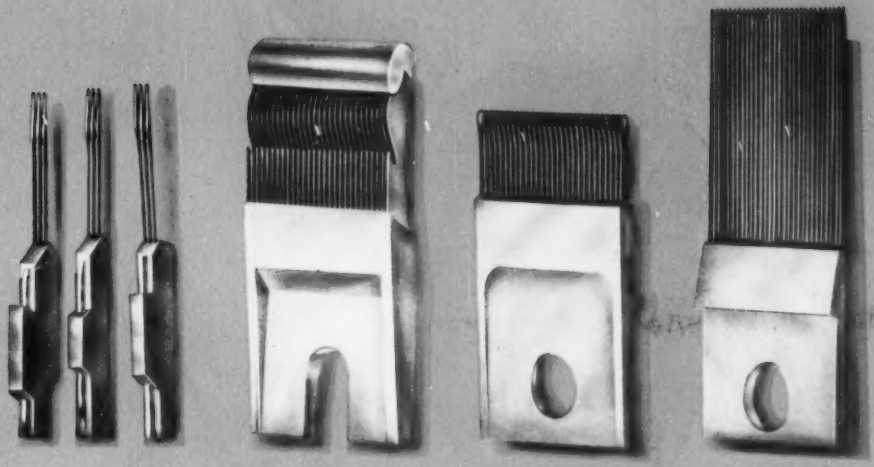
- Regain maintained—Normal moisture content of fibers retained during processing and in finished fabrics.
- Constant weight of yarn and cloth per given length made possible—yarn counts kept more even.
- Output increased—Static electricity eliminated as a problem. Closer machine adjustments and higher speeds maintained. Materials kept in best condition for processing.
- Product quality improved—Fewer imperfections from pieced-up ends. Stronger, smoother and more uniform fabrics. Yarn and cloth sheen improved.
- Waste reduced—More yarn produced from each pound of raw material. Less broken fibers, dust and fly in product.

AMCO

HUMIDIFICATION • COOLING • AIR CONDITIONING

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • ATLANTA • BOSTON • CAMDEN • CHARLOTTE • AFFILIATED WITH GRINNELL COMPANY, INC.

For Tricot Knitters . . .



Top Quality
Leaded Needles and Parts
Now Available from Torrington

Torrington's recently announced needle-leading service now includes a complete line of leaded needles, sinkers, guides and sley points to meet all demands of Tricot machine users for prompt, dependable service on high-quality leaded units.

Manufacturers of Tricot fabrics may now secure Torrington quality for every phase of their needle requirements. Your nearby Torrington representative will give you full details on how this new service can benefit your mill operation.

The Torrington Company

Torrington, Conn., U.S.A. • Established 1866

Branches: New York • Philadelphia • Chicago • Boston • Greensboro, N. C. • St. Louis • Bedford, P. Q. • Toronto, Canada
Pacific Coast Representative: E. G. Paules, 1762 W. Vernon Ave., Los Angeles 37, Calif.

easy mounting...

Torrington Needle Bearings are easy to mount. Installation is a simple arbor press operation. Assembly time and expenses are reduced.

You can forget about spacers, retainers and positioning shoulders, too. They are not needed with Needle Bearings. A straight bore, of proper size, serves as the housing. Thus, design is simplified and machining time is saved.

Would you like to know more about Torrington Needle Bearings in terms of your own anti-friction requirements? Our engineering department will be glad to help.

THE TORRINGTON COMPANY

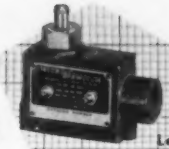
Torrington, Conn. South Bend 21, Ind.

District Offices and Distributors in Principal Cities of United States and Canada

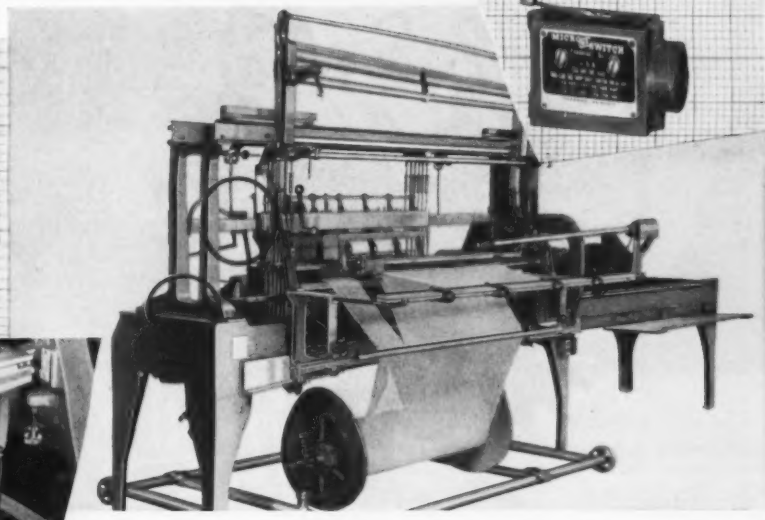
TORRINGTON *NEEDLE* **BEARINGS**

Needle • Spherical Roller • Tapered Roller • Straight Roller • Ball • Needle Rollers

BARBER-COLMAN selects MICRO Precision Switches as "good design" in their Warp Drawing Machine



Let a MICRO SWITCH Engineer show you how you can "use MICRO Precision Switches as a principle of good design"



Barber-Colman Warp Drawing Machine which employs MICRO precision switches to control certain key operations.

Circles show location of MICRO units. One switch actuates the feed motor and is controlled by the reed carriage. If is actuated by a change in the reed dent. Over or under-feeding which could cause skipped or packed dents is signalled by the second switch.

Barber-Colman's Warp Drawing Machine is used to draw in warps of any type of material which is to be woven in a loom. This machine draws each individual thread of a warp through predetermined reed dent, heddle and drop wire in one continuous operation . . . all controlled by the drawing-in pattern to be used.

MICRO precision switches were chosen by Barber-Colman engineers as key controls for this machine whose operation calls for the utmost precision and accuracy to insure a correct draw at all times.

One of the MICRO units actuates the feed motor which controls the carriage movement across the warp, the other controls a bell which signals any malfunction of the reed carriage which may result from over or under feeding.

This selection of MICRO precision switches by Barber-Colman is typical of the many uses which both manufacturers of textile machinery and plant operating men are making of these dependable components to improve the productivity of textile equipment.

Whatever your switching problem, you are invited to make use of MICRO field engineering service to help you select exactly the right MICRO unit to meet your requirements. Call or write the nearest MICRO SWITCH branch office.

MICRO Snap-Action Switches
Honeywell Mercury Switches

MICRO MS SWITCH

FREEPORT, ILLINOIS

H HONEYWELL

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

For more information, write direct or use Reader Service post card.

"Tycol Alweave cuts power consumption... lessens tube loss... lowers equipment down time"

Check! Tycol Alweave Textile Oils reduce thread breakage —hold spindle drag and bolster losses to a minimum. Their high stability and easy scourability let mills operate at top production speeds, with far fewer stoppages.

Specially designed Tycol Alweave Oils are available in a wide range of both mineral and compounded grades. They'll step up efficiency in every mill process.

Learn more about Tycol Alweave Oils. Get in touch with your nearest Tide Water Associated office today.

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TIDE WATER ASSOCIATED OIL COMPANY

17 BATTERY PLACE - NEW YORK 4, N. Y.

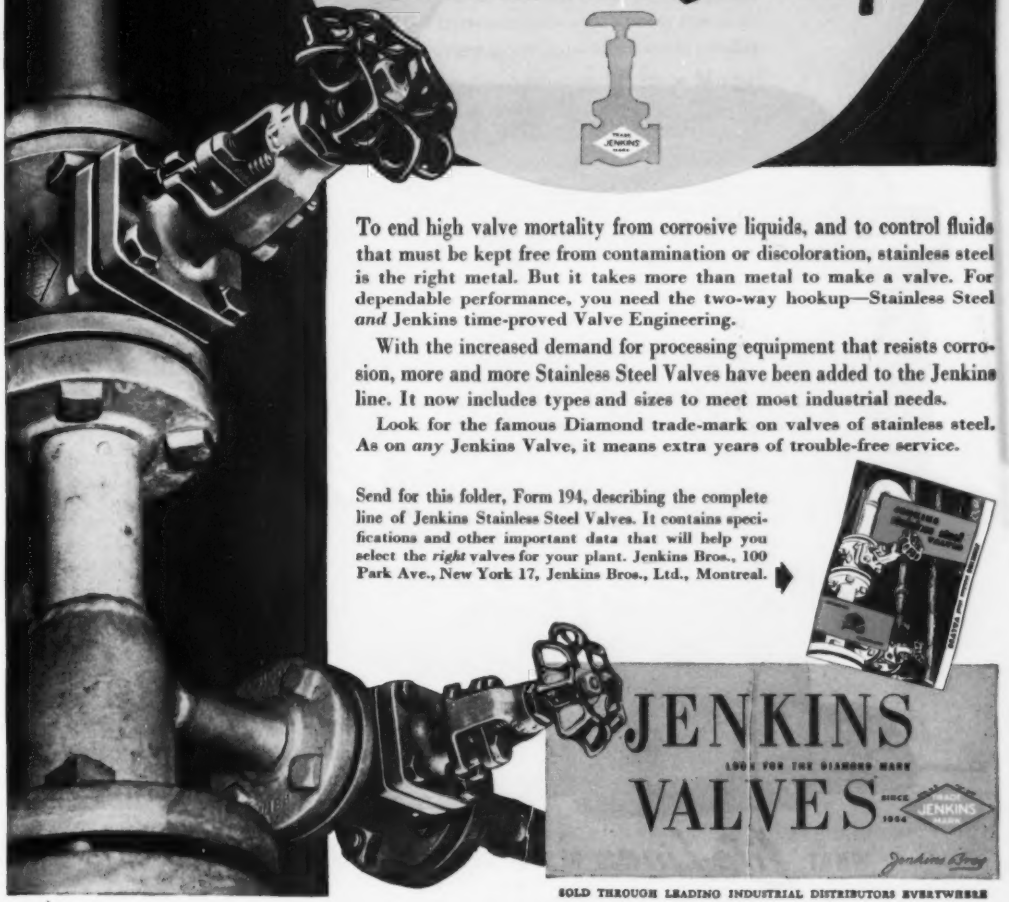
SEND FOR A FREE COPY OF "TIDE WATER ASSOCIATED LUBRICANIA"

Here's the hookup
for valve-killing
corrosive services...

Stainless Steel

PLUS

Jenkins Quality



To end high valve mortality from corrosive liquids, and to control fluids that must be kept free from contamination or discoloration, stainless steel is the right metal. But it takes more than metal to make a valve. For dependable performance, you need the two-way hookup—Stainless Steel *and* Jenkins time-proved Valve Engineering.

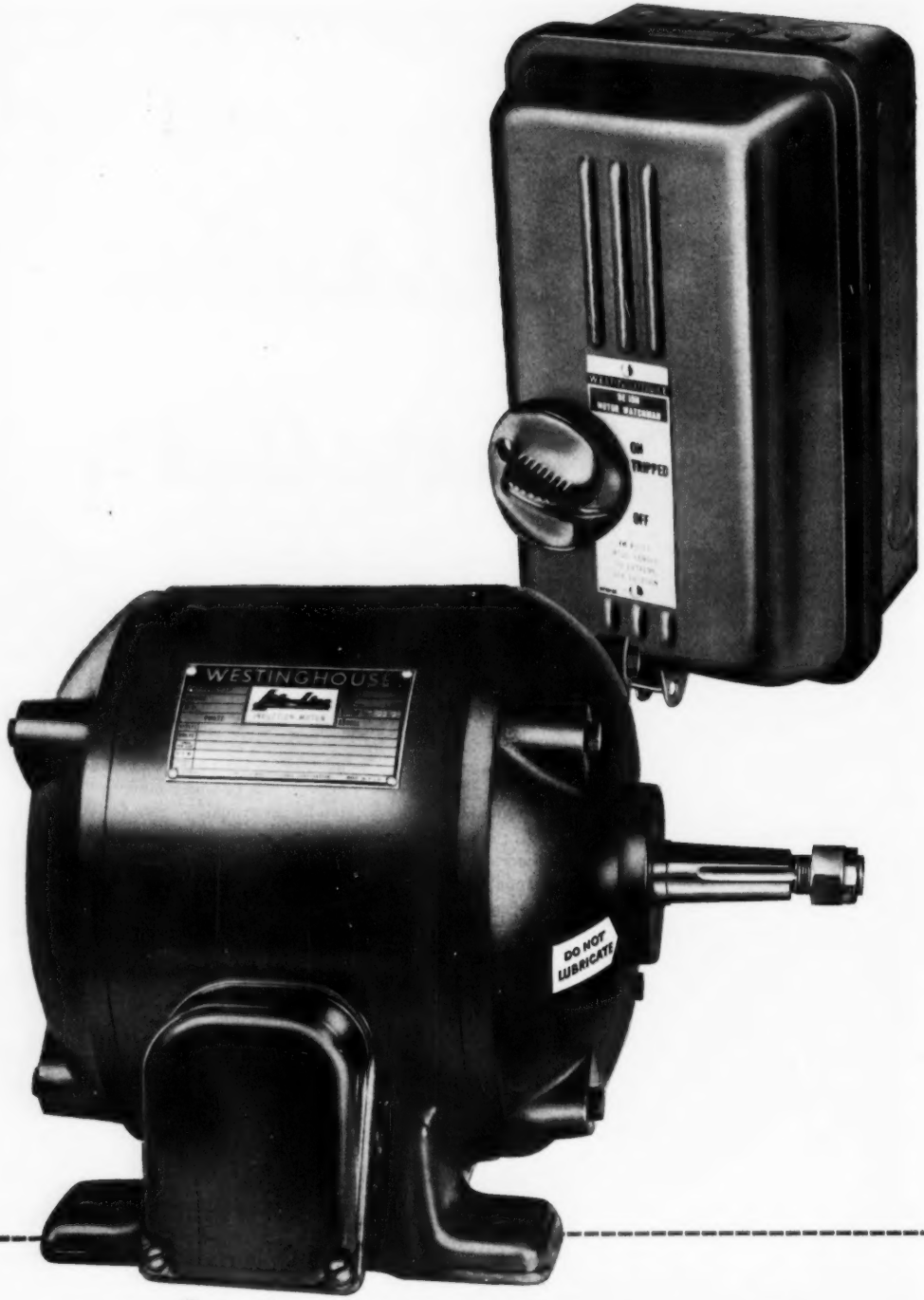
With the increased demand for processing equipment that resists corrosion, more and more Stainless Steel Valves have been added to the Jenkins line. It now includes types and sizes to meet most industrial needs.

Look for the famous Diamond trade-mark on valves of stainless steel. As on *any* Jenkins Valve, it means extra years of trouble-free service.

Send for this folder, Form 194, describing the complete line of Jenkins Stainless Steel Valves. It contains specifications and other important data that will help you select the *right* valves for your plant. Jenkins Bros., 100 Park Ave., New York 17, Jenkins Bros., Ltd., Montreal.

JENKINS
LOOK FOR THE DIAMOND MARK
VALVES
SINCE 1864

SOLD THROUGH LEADING INDUSTRIAL DISTRIBUTORS EVERYWHERE



WHAT *Life-Lines* REALLY DELIVER IS MORE SERVICE...LESS SERVICING

The way to lick lint and dust is to keep it out!

And here's a drive team that really keeps it out!

Look at the extra features of the Loom Motor Starter. A special neoprene gasket forms a positive, continuous seal between case and cover. Pressure from cover-retaining screw makes sure every crevice is filled with pliable neoprene. It's the only starter approved by the Associated Factory Mutual Fire Insurance Companies.

And check the extras on the totally enclosed Loom Motor, too. No chance for lint or dust to clog windings. Notice, too, there are no greasing nipples or cups on the motor. Pre-lubricated, factory-sealed bearings need no lubrication. Thus, outages from both lint clogging and improper lubrication are eliminated.

Together these two make the best drive team for your weave-room equipment. Maintenance has been practically engineered out. Ask your Westinghouse representative for a free copy of, "Motors and Controls in the Textile Industry". Thirty-six well-illustrated pages show how to overcome problems in drive selection. Ask for B-5422, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-21686

NEW

NEW from SKF

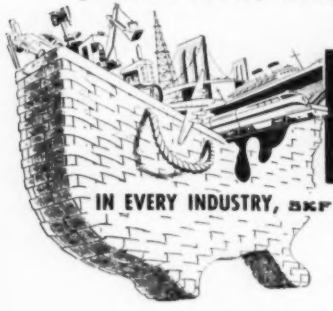
the HESS-BRIGHT "SY" UNIT PILLOW BLOCK

A new Unit Pillow Block, designed by SKF to meet tomorrow's needs of modern industry.

Here are the design features:

- SKF Red Seal, made of DuPont Fairprene, retains lubricant. Wiping action of the seal against the inner ring is practically frictionless.
- Rotating flingers exclude dirt.
- Set screws for ease of installation.
- Spherical outer ring compensates for initial misalignment.
- Alemite fitting for re-lubrication.
- Interchangeability with existing installations made possible by bolt hole spacing and center height features.
- Shaft diameters 1 3/16" to 2 15/16".

Detailed illustration of rotating flinger and RED SEAL—the extremely light tension contact seal.



SKF®
BALL AND ROLLER BEARINGS

IN EVERY INDUSTRY, SKF Puts The Right Bearing In The Right Place

From now on, the name to remember in Unit Pillow Blocks is HESS-BRIGHT "SY"—manufactured in our plants, to the same high quality standards as all SKF products. Ask your SKF Distributor to show you the HESS-BRIGHT "SY"; or write SKF direct for complete information on this *newest* Unit Pillow Block.

SKF INDUSTRIES, INC., Phila. 32, Pa.—*manufacturers of* **SKF** *and* HESS-BRIGHT *bearings.* 7322-A

Yarn Carriers, too, are Capital Equipment

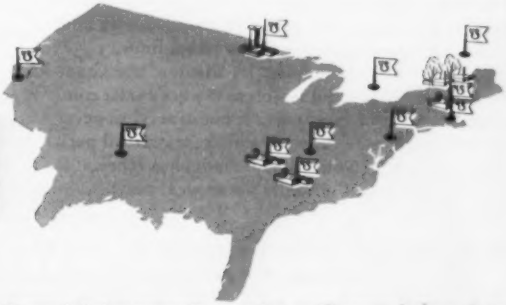
Suppose all the bobbins you buy in a year were delivered as one giant bobbin . . . and the same for all the shuttles.

You could easily see, then, why they should be classed as capital equipment. In some mills, the annual cost for yarn carriers runs to $80,000. And even in moderate sized mills, it can total more than is paid for major units of processing machinery.

You could see, also, why carriers should be bought with the same sharp eye to quality and performance that you would apply in a machinery purchase.

No mill man would knowingly handicap processing operations with yarn carriers that fail to measure up to performance standards. But he takes that chance when carriers are carelessly chosen because their *low individual cost* does not seem to warrant top management's attention.

You can be sure you are investing in products of proved efficiency and endurance when you specify U S Bobbins and Shuttles. Talk to a U S sales representative. You'll find him fully prepared to help you get better yarn and fabric quality, and lower operating costs.



U S owned timber properties permit complete control of wood stock selection and every step in processing, from forest to finished products. Five manufacturing plants, North and South, provide ample facilities to produce and deliver promptly the cost-saving yarn carriers you need, in any quantity.

Anywhere in textile America, you are near the headquarters of a U S specialist in yarn carrier selection. He'll call at your request.

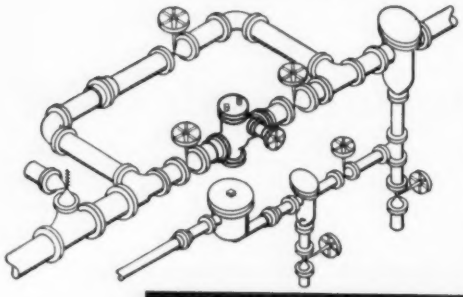
U S BOBBIN & SHUTTLE CO.

LAWRENCE, MASS. PROVIDENCE, R. I. PHILADELPHIA, PA.
JOHNSON CITY, TENN. GREENVILLE, S. C. CHARLOTTE, N. C.
MINNEAPOLIS, MINN.

LOS ANGELES: E. G. Poules, 1782 W. Vernon Ave.
DALLAS: O. T. Daniel, Textile Supply Co.
CANADA: W. J. Westaway, Montreal, Que., Hamilton, Ont.

Can Your Pressure Regulators Match This Service Record?

...on a Steam Kettle for instance



THE INSTALLATION

On steam supply line to cooking kettle, Schoenling Brewing Company, Cincinnati.

THE HISTORY

Specifications for this installation called for a regulator to reduce main line steam supply at 100 psi to 30 psi, and automatically maintain the reduced pressure to cooker, 24 hours daily, without significant fluctuation.

A Crane Pressure Regulator with factory pre-set range was selected and properly installed with adequate, automatic drainage of the steam lines.

For 16 years, throughout its lifetime, the Crane Pressure Regulator did its job to the brewery's complete satisfaction. Never was it out of service; never did it require more than the simple prescribed periodic inspection. (Note: current model has renewable wearing parts; will virtually never wear out.)

VALVE SERVICE RATINGS

SERVICE LIFE:	16 years - 24 hours per day
MAINTENANCE COST:	None - simple servicing only
SPECIAL FEATURES:	Good pressure range - easy adjustment
SUITABILITY:	Steady flow - no pressure build-up
OPERATING RESULTS:	Accurate control of cooking process
PRICE:	Low - considering service life
AVAILABILITY:	Stock item - Crane line

THE VALVE

Crane No. 960 Brass Pressure Regulators are made for reducing steam or air pressures up to 250 pounds, to within 80% of inlet pressure. They are factory pre-set to operate within any of 4 ranges from 1 to 200 pounds, with easily selected outlet pressure within set range. Precision made, they are fully automatic, highly dependable, even under reasonable fluctuation of inlet pressure. All wearing parts renewable. See your Crane Catalog or Crane Representative for complete data.

The Complete Crane Line Meets All Valve Needs. That's Why

More Crane Valves Are Used Than Any Other Make!

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois

Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

Standard worm gearing and standard speed reducers, or specially engineered units to meet any machinery manufacturer's requirements, are Cleveland's business.

When you want the finest, specify "Cleveland"

● When you specify or buy a drive for a machine, conveyor, or other motor-operated equipment, ask yourself these questions:

Does this drive have a performance record for trouble-free, efficient service?

Does it permit best arrangement of equipment, occupying least floor space?

Will it operate under adverse conditions, with minimum attention?

Is its life unlimited, making replacement unnecessary?

Is its lifetime cost lowest?

Because for the last 40 years Cleveland has answered all these questions with a "Yes", you'll find Cleveland worm gearing and Cleveland worm gear speed reducers on thousands of the toughest drive jobs in industry. That's why Clevelands are preferred—known as the finest among fine worm gear drives.

Write for the new Cleveland catalog, showing all the types and sizes of Cleveland Worm Gear Speed Reducers now available. The Cleveland Worm & Gear Company, 3268 East 80th Street, Cleveland 4, Ohio.

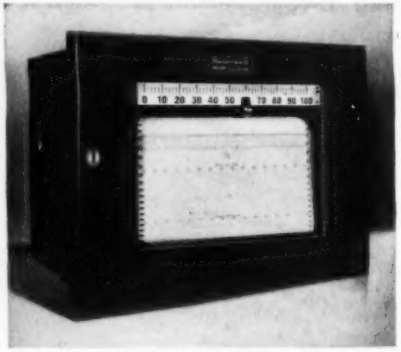
Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.

For more information, write direct or use Reader Service post card.

MILESTONE IN '40—STILL GROWING IN '52

ONLY a few years ago, the science of sensitive, accurate measurement was confined to the laboratory. But today, this science is practiced every day in thousands of industrial plants—by people who need no specialized technical skills.

Production men wanted to put this science to work, for they had known for some time that many processes would function at greater efficiency if temperature, pressure and other variables could be more accurately maintained. Although these potential benefits could easily be proved in the laboratory or in pilot plants, they could seldom be exploited fully in actual production. One of the big reasons was that existing industrial methods of measurement were not sufficiently accurate, sensitive or fast. The inherent limitations of galvanometers and mechanical balancing systems always required a compromise between sensitivity and ruggedness . . . and could provide only periodic measurements.



A FAMILIAR SIGHT *to thousands of production men, scientists and engineers is this strip-chart* ***ElectroniK*** *Recorder . . . one of a complete family of indicating, recording and controlling instruments.*

Then, in 1940, the advent of *ElectroniK* instruments swept away these limitations. By adopting an entirely new approach—electronic continuous balancing—these instruments revolutionized the concepts of industrial measurement. They placed laboratory accuracy and sensitivity at the disposal of the production man . . . with all the simplicity and ruggedness demanded by industrial service . . . *plus* a speed of response never before economically practical.

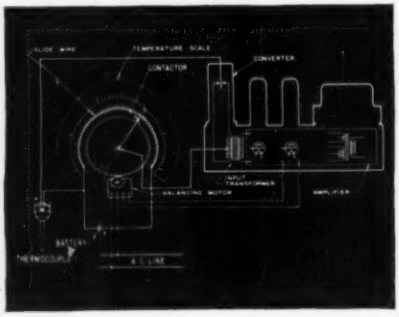
In the past twelve years, thousands of plants have discovered almost endless applications where the superior performance of these instruments helps to improve operations. The more they learn about *ElectroniK* instruments, the more they call on them to execute increasingly complex tasks of measurement and automatic control.

Since 1940, the *ElectroniK* family has grown and matured—not merely in step with the times, but in anticipation of the needs of the future.

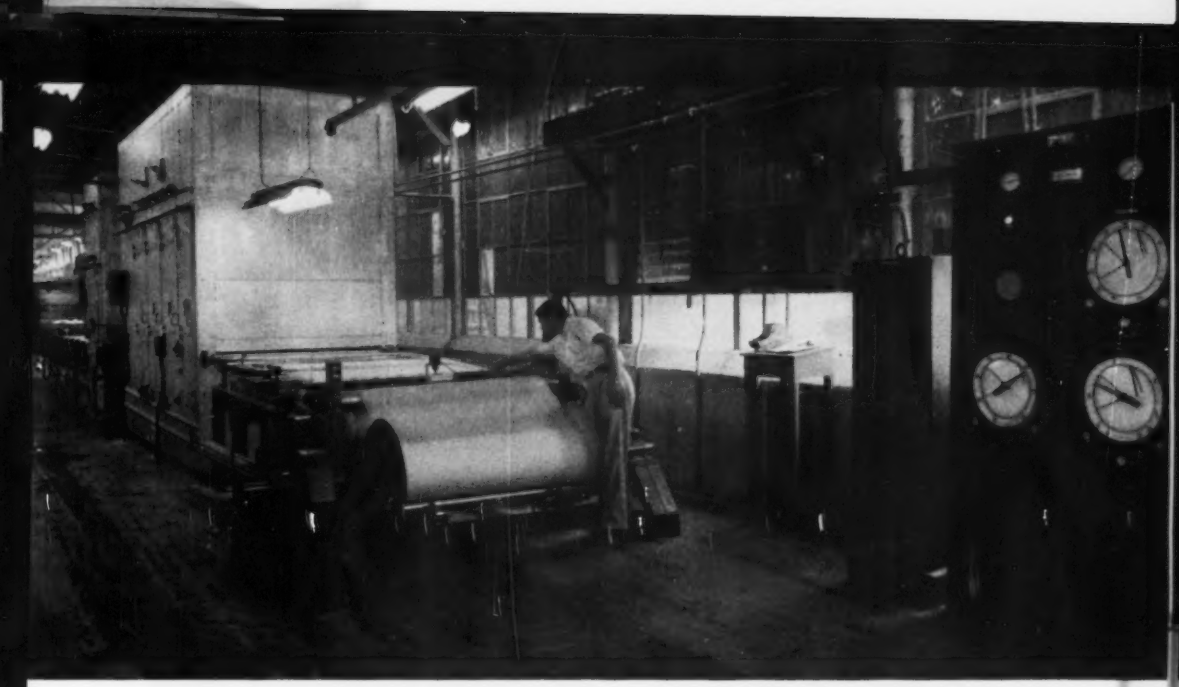
Modern methods

UTILIZE

Honeywell's continuing development has brought forth a host of new models, including advanced types of automatic control . . . and will be ready with even more advanced equipment for tomorrow's process control problems.



THIS IS *the* ***ElectroniK*** *power plant . . . which amplifies by millions of times the minute electrical signals from thermocouples and other sensing elements.*



IMPROVED EFFICIENCY *and greater production of this McConnel hot air slasher are attributed to modern processing equipment—and to coordinated* ***ElectroniK*** *instrumentation for controlling warp regain and temperatures of the dryer and size box.*

in the Textile Industry

ElectroniK INSTRUMENTS

UNDER the pressure, first of wartime production, and later of a concerted squeeze on profit margins, many manufacturing methods in the textile industry have matured from an art to a science. These advances have been possible to no small extent because better means of measurement and control were available to the industry's technicians. *ElectroniK* instruments have been right in the forefront of these developments. The greater speed and sensitivity which these instruments possess have brought new accuracy to temperatures of dyeing, bleaching, decating and drying processes. Automatic time-pattern control has removed the uncertainties of human supervision from piece goods dyeing and nylon hosiery dyeing.

The versatility of *ElectroniK* instruments has brought into being new types of measurements that further increase the textile man's knowledge and control of production variables. Outstanding among these are the electronic *Moist-O-Graph*, which measures and controls per cent regain *directly and continuously;* the *ElectroniK* viscosity recorder which reads directly the size viscosity; and *ElectroniK* instruments for pH and for electrolytic conductivity, which measure and regulate process chemical reactions.

You'll be sure of realizing the greatest benefits from new processes or from modernization of present equipment—when you include in your planning the utilization of advanced *ElectroniK* instrumentation. Your local Honeywell engineering representative is well qualified to help you work out your process control problems. Call him today . . . he is as near as your phone.

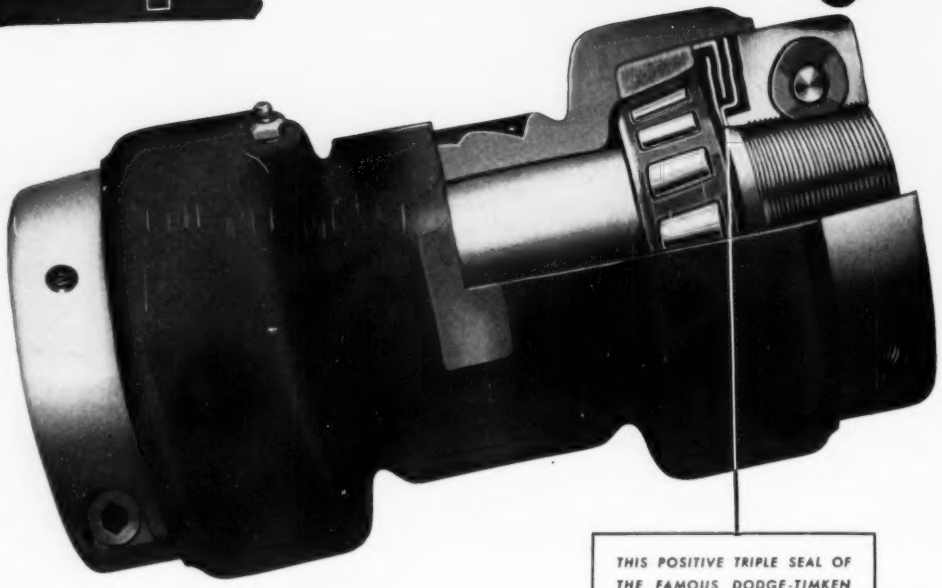
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Avenue, Philadelphia 44, Penna.

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS

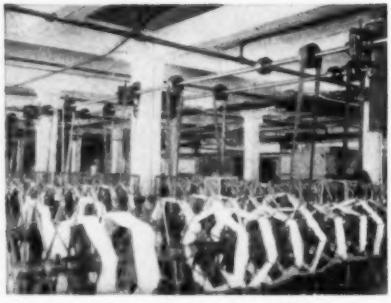
First in Controls

● *Important Reference Data*
Write for Catalog 15-15, "*ElectroniK* Potentiometers"; and for Bulletin 9306, "Instrumentation for Slasher Room Processes."

Stops Oil Damage!



THIS POSITIVE TRIPLE SEAL OF THE FAMOUS DODGE-TIMKEN TYPE C BEARING ELIMINATES OIL DRIP...HERE IS THE IDEAL BEARING FOR TEXTILE MILL USE!



This installation of Dodge-Timken Hanger Bearings protects quality and profits. Special seals prevent oil leakage on the product, reduce "seconds." Bearings remain properly lubricated, saving labor.

IS OIL DRIP eating holes in your profits? To keep the lubricant where it belongs—*inside the bearing*—switch to Dodge-Timken. These famous bearings, noted throughout the world for quality, have proved themselves in millions of industry's toughest jobs.

The type C Dodge-Timken Bearing is especially adapted to use in the textile field. Its indestructible steel seal positively prevents lubrication leakage—definitely cuts a mill's loss from "seconds."

Available from distributors' stocks—in shaft sizes from 1-7/16" to 3-15/16". Completely assembled, factory adjusted, pre-lubricated and ready to install on the shaft for a minimum of 30,000 hours of uninterrupted service. Call your nearest Dodge Transmissioneer. Or write us for detailed bulletin.

DODGE MANUFACTURING CORPORATION
1400 Union Street • Mishawaka, Indiana

CALL A DODGE TRANSMISSIONEER. He's factory-trained to help solve your power drive problems. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

DODGE
of Mishawaka, Ind.

Smooth out your looms, cut your down time... with this extra long-life check strap

Gates patented Multi-Check Strap

OLD STYLE STRAPS

The shock is concentrated here

FIG. 1

Strap must stretch to conform to picker stick angle . . . and it keeps on stretching

FIG. 2

Since a picker stick is slanting as it strikes a check strap, the *top edge* of an ordinary *one-piece* check strap takes the full force of the blow (See Fig. 1). The strap stretches to *conform to the angle of the picker stick.* (See Fig. 2). This means frequent adjustment—valuable production time lost. And as the strap stretches it loses resiliency, making a really smooth check impossible.

To solve this problem Gates Textile Engineers developed the endless MULTI-CHECK STRAP. It consists of four separate bands, each moving independently of the others, which provides **progressive** checking action.

HERE'S HOW IT WORKS to give you the *smoothest* shuttle check you've ever had . . .

The separate bands, operating as a team, absorb shuttle shock gradually, eliminating shuttle bounce and jerky checking. Wear is distributed over all four bands, lengthening the check strap life.

Furthermore, the bands are individually molded of Gates Tex-Hide—the resilient material that doesn't stretch, outwears leather and composition, and is unaffected by changes of temperature and humidity.

All these advantages of the patented Multi-Check Strap mean longer strap life, less down-time, and smoother loom operation.

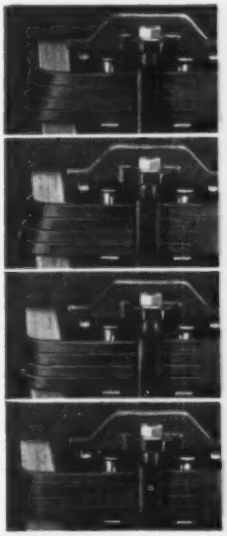
TP-525

Checking action begins as picker stick contacts *top* band of Multi-Check Strap.

Stick is then slowed by *second* band of tough, resilient Tex-Hide.

Third band comes into play, absorbing more of the force of shuttle and stick.

Fourth band, in turn, takes its share of the shock. Picker stick is cushioned *gradually* to a smooth stop by *all four bands* acting together.



Gates

TEX-HIDE Multi-Check Strap

Gates Textile Accessories—Products of *Specialized* Research

Tex-Hide Harness Straps

Tex-Hide Reversible Picker

Tractive-Rib Roll Covering
Cone and Evener Belts
V-Belt Loom Drive
Textile Mill Hose

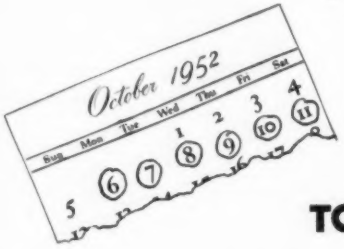
Tex-Hide Loop Picker

Tex-Hide and Super Tex-Hide Lug Straps

THE GATES RUBBER COMPANY • DENVER, U.S.A.

Engineering Offices and Stocks in All Textile Centers

Mark Your Calendar!



TO ATTEND THE

17th Southern Textile Exposition

October 6-11, 1952

TEXTILE HALL

Greenville, S. C.

An opportunity to become acquainted with the latest developments in machinery, equipment, accessories, supplies, and techniques relating to the textile industry.

For information or room reservations, write Textile Hall Corporation, 322 West Washington Street, Greenville, S. C.

"AN INSTITUTION OF THE TEXTILE INDUSTRY SINCE 1915"

STOP VALVE CORROSION IN YOUR PIPELINES!

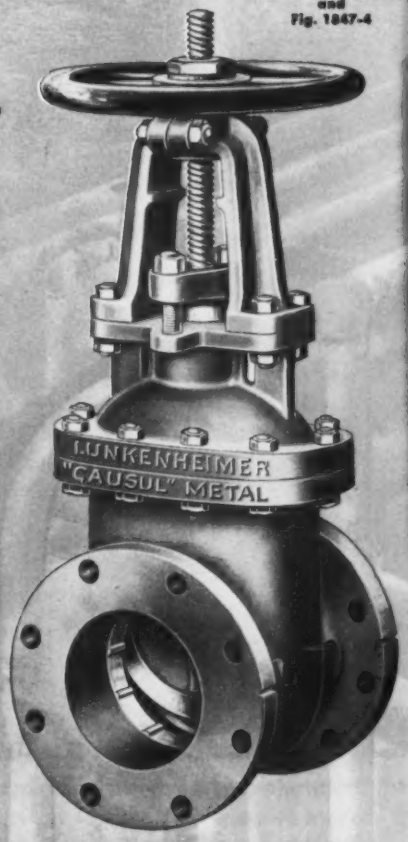
LUNKENHEIMER "Causul"* Metal Valves Resist Acids and Corrosive Fluids

The following are typical of the many acids and corrosive fluids "Causul" Metal Valves handle without corrosion in the valves:

Acetic Anhydride (Pure)
Acetone
Alcohol
Alkalis
Aluminum Sulfate
Ammonia Liquor
Ammonium Sulfide
Ammonium Hydrate
Ammonia-Gaseous
Ammonia-Aqueous
Aniline
Amyl Acetate
Beer
Benzene
Benzol (Containing Sulfur)
Black Liquor
Brines—Acid
Brines—Neutral
Brines—Alkaline
Calcium Chloride (Acid)
Calcium Chloride (Alkaline)
Calcium Hydroxide
Carbolic Acid
Caustic Soda—25% 150°F.
Caustic Soda—50% 150°F.
Caustic Soda—50% 230°F.
Carbon Bisulfide
Carbon Tetrachloride (Plus .5% H Cl)
Chrome Alum
Creosote
Crude Oil
Cyanides
Dye—Black Sulfur
Dye—other (except Chromes)
Edible Oils
Ethyl Acetate
Ethyl Chloride
Fatty Acids (Acidulated)
Fruit Juices
Fuel Oil
Garbage Liquor
Gasoline (Sour)
Glycerine
Hydrogen Peroxide (U.S.P.)
Hydrogen Sulfide
Lime
Mayonnaise
Mercerizing Solutions
Natural Gas (Corrosive)
Oleic Acid
Oxalic Acid
Paper Pulp Mill Liquors
(Soda and Sulfate or Kraft Processes)
Black Liquor
Green Liquor
White Liquor
Phosphoric Acid (Pure)
Potash Alum
Potassium Hydroxide
Pyroligneous Acid
Pickling Acid—complete information required
Producer Gas (corrosive)
Rayon Solutions (except those containing copper salts and acetic acid)
Rosin Oil
Salt (sodium chloride)
Salt Brines
Salty Crude Oils
Sewage
Sludge Acid (Petroleum and Coke By-product)
Soda Ash
Sodium Aluminate
Sodium Bicarbonate
Sodium Carbonate
Sodium Hydroxide
Sodium Silicate
Sodium Sulfide
Sodium Sulfite (neutral or alkaline)
Sour Mash (Distilleries)
Sulfur Chloride
Sulfuric Acid—5% 80°F.
Sulfuric Acid 10% 80°F.
Sulfuric Acid—25% 80°F.
Sulfuric Acid—50% 80°F.
Sulfuric Acid—78% 80°F.
Sulfuric Acid—95% 80°F
Sulfuric Acid—5% 150°F.
Sulfuric Acid—10% 150°F.
Sulfuric Acid—25% 150°F.
Sulfuric Acid—50% 150°F.
Sulfuric Acid—78% 150°F.
Sulfuric Acid—95% 150°F.
Tankage (highly acid)
Trichlorethylene (solvent)
Turpentine
Turpentine Oil
Water-Alkaline Tap Waters
Zeolite, Permutit, Sodium Aluminate treated waters

*Reg. T/M of The L Co.

Fig. 1639-S and Fig. 1847-4



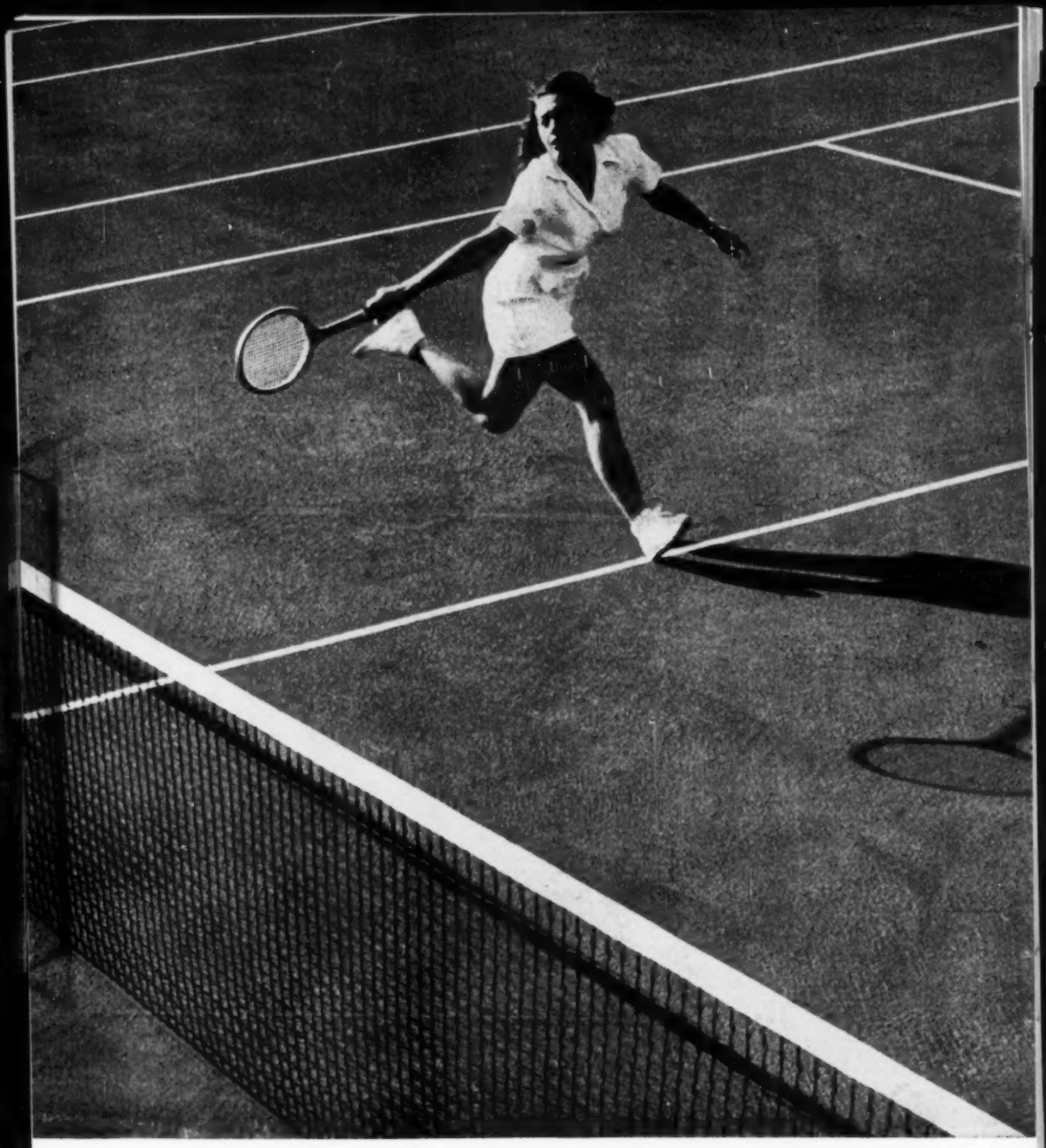
WRITE FOR Circular 592 which explains "Causul" Metal Valve properties, trims, and typical applications. A confidential information blank is included with the Circular. Just fill it out, return it, and our engineers will recommend the correct "Causul" Metal Valve for any specific service you name. Write The Lunkenheimer Co., Box 360R, Cincinnati 14, Ohio.

IRON • BRONZE • STEEL

LUNKENHEIMER

THE ONE *Great* NAME IN VALVES

L-952-E1



courtesy of Bradford Junior College, Bradford, Mass.

She's a great tennis player—

Alice Marble is the only woman to have won the singles, doubles, and mixed doubles in both America and England in one year — 1939. These victories climaxed the amateur tennis career of this courageous athlete who was told in 1934 that she would never play tennis again.

BUT how does she compare with Alice Marble? ...In everything we do, we make comparisons . . . In Full-Fashioned Knitting, the one standard for comparison is the 30-section "Reading" Machine with a production of 14 to 16 dozen pairs of superior quality stockings in 8 hours. 51-gauge, 60-gauge.

TEXTILE MACHINE WORKS • READING, PENNA.

Some Things Are WORSE THAN STRIKES

This editorial which appears in McGraw-Hill publications was written just prior to the resignation of Charles E. Wilson as Director of Mobilization. The principle it discusses is of basic and continuing importance in our struggle to maintain economic and personal freedom in America.

It is to be hoped that the managements of the steel industry will resolutely resist the efforts of the national Wage Stabilization Board to force them to establish the union shop in their plants. In essence, the union shop means compulsory union membership.

They should resist not because of any financial advantage to the owners of the industry. There would be none. They should resist out of a decent regard for those ideals of our country which we are now fighting in Korea to protect. Moreover, their resistance would, as a matter of fact, benefit the leaders of the organized steel workers by protecting them from the certain and bitter fruits of their "victory" in getting the government to impose the union shop on the steel industry. Their successful resistance would also prevent Premier Stalin and his co-workers from enjoying a hearty laugh at our expense.

Fun for the Russians

This is why the Politburo would find the establishment of the union shop in the steel industry, at the behest of the Wage Stabilization Board, so profoundly amusing. We are fighting in Korea because we believe that armed aggression, promoted by Russia, menaces our freedom. And we are spending hundreds of billions of dollars here at home for armament to protect our freedom at other danger points. When this rearmament program is threatened by a crippling strike, the federal government through its Wage Stabilization Board proposes to buy off the threat by plowing under a vital element of that freedom which we are trying so desperately to preserve.

When the union shop is adopted through voluntary agreement, as it has been in cases covering millions of workers, it deeply undercuts the freedom of the individual. To hold his job he is required to join the union and support it financially whether he wants to or not. In the case of such voluntary agreement, however, the government takes no direct part in thus destroying the freedom of its citizens. It is essentially a private transaction.

Tyranny is the Word

But in the steel case the federal government becomes a party to a direct attempt to impose the union shop. Instead of protecting its citizens in their right to earn a livelihood, the government forces certain of them to join and support a private organization which they have clearly indicated they do not want to join. This they must do to hold their jobs. Tyranny is the accepted designation of government coercion of this kind.

It may be objected that the Wage Stabilization Board merely recommends the union shop, does not order it. This was also true of the action recently taken by a President's Emergency Board, which also "recommended" that working agreements between the

railroads and about a million non-operating railroad employees include a provision for the union shop. A government recommendation, however, can easily be given much of the force of an order, particularly by the calling of a strike to "uphold the hand of the government."

It seems entirely clear that in trying to impose the union shop on the steel industry the Wage Stabilization Board has completely lost its bearings. It was set up to handle labor problems to tide over an emergency. Now it comes up with a revolutionary modification of labor relations in the steel industry which, if adopted, would become a permanent part of the institutional machinery of the industry.

"Too Much Like Hitler"

Early in World War II an effort was made to have the federal government order the union shop for a group of organized coal miners. President Franklin D. Roosevelt, who will go down in history as one of organized labor's greatest champions, blocked it. "That," he said, "would be too much like the Hitler methods toward labor." But now, with supreme irony, the federal government fosters this Hitlerlike method toward labor ostensibly to advance our conflict with Stalin.

In persuading the Wage Stabilization Board to sponsor the union shop for steel workers, there is every reason to believe that the union leaders have trapped themselves. If the government imposes the union shop, a next step clearly becomes necessary. This is government regulation of the union in order to provide a modicum of protection for the minority that would be forced by the government to join against their will. It could be that for a time the government would ignore this obligation. But, having granted the union the power to eliminate the minority, it would sooner or later be forced to regulate the use of that power. Thus free collective bargaining and freedom itself would be the losers.

An Issue of Basic Principle

Resistance to a government-sponsored union shop for the steel industry is bound to bring harsh denunciation both from the administration and union leaders who have teamed to back it. Not only does the union shop relieve the union leaders of the problem of recruiting members, it also eliminates a group of workers that they stigmatize as "free riders"—namely, those who work for companies which have a working agreement with a union but do not join the union. In the basic steel industry about 10 per cent of those who work for companies with union agreements are not members of the union. Such a small percentage of non-members is obviously no threat to the "security" of the union, although that is what the drive for the union shop ostensibly is designed to protect.

In the reporting of the present labor dispute in the steel industry virtually all of the attention has been focussed on the handling of the issue of a wage increase and how large it should be. This, to be sure, is vitally important. Mobilization Director Wilson has said it is "a serious threat to our year-old effort to stabilize the economy." But certainly of comparable importance is the tremendous issue of principle raised by the government's backing of the union shop for the steel industry.

If the position of the Wage Stabilization Board on the union shop prevails, our government will have blunted the arms we are forging to fight for our freedom abroad by undermining a major bulwark of our freedom right here at home. At this critical time in the struggle to preserve and protect our freedom such a subversive course should be resisted to the limit.

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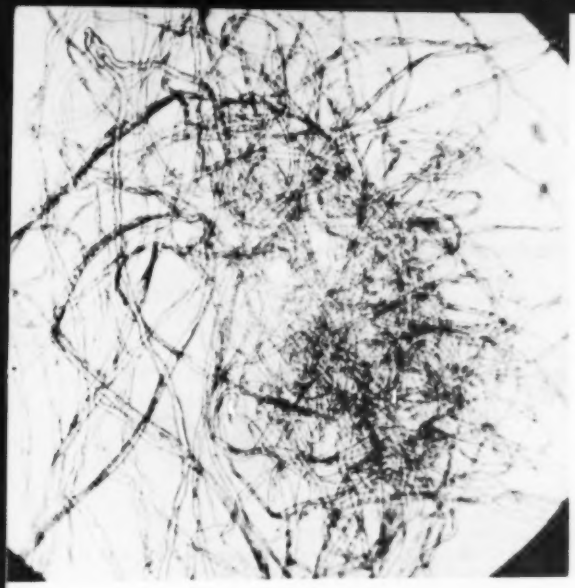

VOL. 102 MAY, 1952 NO. 5

NEPS...
And How To Control Them

This report of a three-year U. S. D. A.-sponsored study of the causes of and remedies for neps in cotton yarn upsets some 150-year-old concepts and shows that—

- The secret of reducing neps is better fiber control.
- Good machine condition, less beating, and coordinated surface speeds are key factors.
- In carding, new recommended speeds and settings can not only reduce neps but reduce waste, raise production, and produce yarns of higher strength and better quality.

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A TEXTILE WORLD REPORT TO MILL MANAGEMENT

To Reduce Neps . . .

DO THESE THINGS

In General:

- Keep machines in good condition, free of rust, rough spots, nicks
- Select cottons that have less tendency to form neps
- Use smooth-ginned cotton

In Opening and Picking:

- Work and beat cotton as little as possible
- Avoid pulling or blowing cotton by air through long pipes
- Keep air currents under control
- Get the cotton through the machine as rapidly as possible
- Keep beaters sharp, grid bars shiny
- Use Kirschner beaters as often as possible

In Carding:

See recommended speeds and settings in the chart on page 97. Most important:

- Run lickerin at around 800 rpm.
- Set mote knives at 30°
- Set flats to cylinder and doffer to cylinder as close as possible
- Strip and grind clothing as often as practical

For detailed reasons for these recommendations, see the following pages . . .

What Causes Neps in Processing?

Neps are man-made. They do not occur in the cotton boll. Research men at the School of Textiles, North Carolina State College, spent three years finding what processing factors did or did not affect nep formation. Here's a list of the answers . . .

These Factors Affect Formation of Neps
(*not listed in order of importance*)

- Variety of cotton
- Type of ginning
- Type of opening machinery
- Moving cotton through pipes
- Air currents
- Condition of equipment—nicks, rough spots, rust, protruding bolts
- Harsh beating of cotton
- Degree of opening and picking
- Type of beater used
- Lickerin speed
- Speed of doffer
- Speed of flats
- Frequency of stripping
- Frequency of grinding
- Flats-to-cylinder settings
- Doffer-to-cylinder settings
- Setting of mote knives
- Angle of mote knives
- Feed plate-to-lickerin setting
- Cylinder-screen settings
- Weight of lap fed
- Lickerin-screen settings
- Use of roller-top-cards
- Drafting, regardless of speeds and settings

How One Mill Used This Study . . .

For the story of how a Georgia cotton mill made use of early results of this study, see "We're Carding at 25 lb. per Hr.," by E. A. Bentley, Supt., Swift Mfg. Co., on page 107 of this issue.

These Factors Do Not Affect Formation of Neps

- Speed of card cylinder
- Knife-plate settings
- Card draft
- Type of lickerin wire
- Type of lickerin screen
- Lickerin-to-cylinder setting
- Speeds and settings in drafting

The Secret of Nep Control Is Good FIBER CONTROL

- **Neps are tangled fibers. To reduce neps, reduce opportunities for tangling.**
- **Good machine condition and control of air currents are keys to fewer neps.**
- **End-to-end "collapse" of fibers is the start of neps. Prevent this collapse by less beating and closer coordination of surface speeds.**

NEPS ARE CAUSED by fibers getting out of control and getting entangled. Although varietal characteristics and maturity of fibers affect the nepability of cotton, the key to reducing neps is to control fibers as much as possible.

If, in processing, each individual fiber could be held at both ends and carefully put through each machine, neps could be avoided. But with the present types of cotton-processing machines, neps are inevitable.

Much can be done, however, to reduce the number of neps formed. Specific recommendations for nep-preventing adjustments on each processing machine will be given in detail in the following pages.

But certain basic principles for nep reduction have emerged from this study. Broadly speaking, if these principles are applied to cotton processing on all machines, the result will be not only fewer neps but stronger and better yarn as well.

Close microscopic study shows that a nep is simply a group of two or more fibers that have become so tangled up with each other that it is practically impossible to untangle them. A nep can also be formed by a single fiber becoming tangled up in itself.

These neps are caused by permitting fibers to get out of control and thus permitting them to roll around each other or to become collapsed. This "collapsing" is not an internal collapse. It is rather an end to end collapse, as becoming folded, like an accordion; spiralled, like a spring; or simply collapsed in a U-shape or crossed by bringing the two fiber ends together. As any Boy Scout knows, the first step in forming a simple knot is to bring two ends of a rope together.

A similar action can be the first step in forming a nep.

Collapsing or entanglement, by whatever form, can be caused by permitting fibers to roll around in an uncontrolled air current. Tangling can also be caused by permitting fibers to string out around a bolt head or a rough spot on the inside of a machine. Collapsing can also be caused by a large difference in surface speeds when fibers are transferred from one surface to another.

Neps can be prevented by eliminating these conditions.

Whenever fibers cross a surface, or are crossed by a surface, as in beating, the surface should be smooth and free of nicks or obstructions. Thus, keeping machines in good condition is one general way to prevent neps. Don't let fibers collect on rough spots. Do as little "working" or manipulation of fibers as possible.

Whenever fibers are carried by air currents, the currents should be controlled. To permit local whirlwinds to form is to cause neps to form.

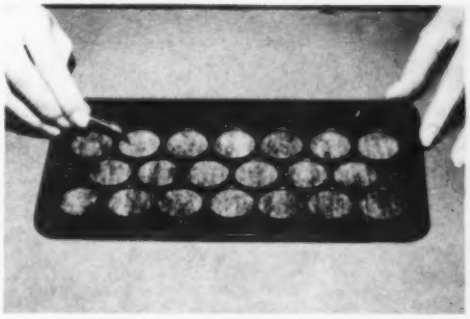
Good machine condition, controlled air currents, and as little "working" of fibers as possible mean presenting fewer opportunities for neps to form. The following pages describe specific ways to do these things.

This Template Is Recommended for Making Nep Counts

To get more accurate nep counts in a way that is less tedious and fatiguing for the person counting, this nep-counting template was developed at the School of Textiles, North Carolina State College, Raleigh, N. C.

The device consists of a metal plate in which 20 circular holes of 1-sq.-in. area have been cut. The back of the template has a clamping arrangement that securely holds a black-cardboard plate 4 in. wide and 9 in. long. The sides of the bored holes are tapered, and the face of the template is covered with a baked black crackle finish to provide contrast and to eliminate glare. Circular holes are used because this figure has the smallest ratio of circumference to enclosed area, and thus keeps to a minimum the chances of neps falling on the edge of the inspection area.

In use, a sample of card web is taken in the usual way with a black cardboard, and web and board are clamped in the template. The neps in each square-inch opening are counted and recorded. Since the inspection areas are open, it is possible to inspect the material thoroughly, employing forceps or needles if necessary.



MORE ACCURATE NEP COUNTS and counts that are less fatiguing to the operator can be made with this new template. Circular holes have lowest ratio of circumference to enclosed area.

To Reduce Neps Before They Start-- SELECT YOUR COTTON CAREFULLY

Careful selection of cotton, as many mill men know, can do much to prevent the formation of neps. Some cottons tend to form neps more easily than others.

Factors that affect the ability of cottons to form neps are type of ginning used, and fiber fineness, maturity, and possibly length. Fine fibers and immature fibers form neps more readily than coarser cottons. Length, of course, is usually associated with fineness; thus longer-staple cottons also form neps more readily than short cottons. The accompanying photos show how variety can affect the ability of various cottons to form neps.

Many neps can be prevented in processing if smooth-ginned cottons are used. The accompanying photo shows the difference between yarns spun from smooth- and rough-ginned cottons.

It seems feasible to predict the "nepability" of cottons by mechanical manipulation of the fibers. Early models of such a "nep potentiometer" have been developed at the School of Textiles, N. C. State College, and research is continuing under a grant from the U. S. Dept. of Agriculture.

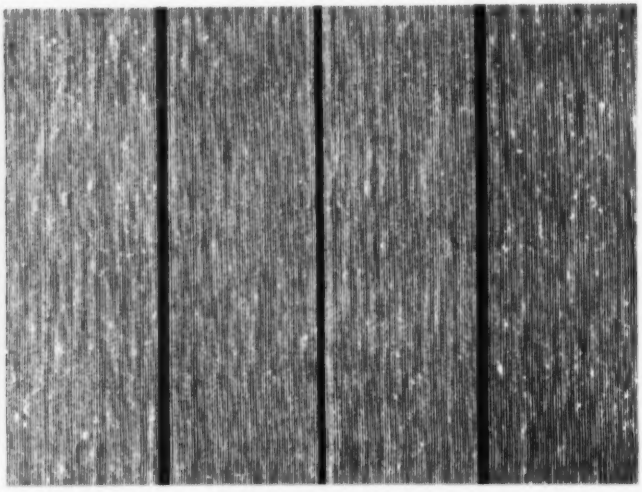
These Are the Cottons N. C. State Worked With

Variety	Fiber Length		Maturity (percent)	Fineness (micrograms)	Uniformity (percent)	Strength (1,000 lb. per sq. in.)
	Upper-Half Mean	Estimated Classer's Length (In.)				
Acala P18C	1.07	1 1/16	76	3.94	79	74.4
Deltapine 14	1.02	1 1/16	91	4.69	80	76.2
Rowden	1.04	1	92	6.50	80.7	70.3
SXP	1.47	1 1/2	90	2.70	78.2	94.2
Acala 4-42	1.11	1 1/8	88	4.65	80.2	89.7
Amak	1.42	1 13/32	90	37.0	79.6	98.9
Deltapine 15	1.10	1 3/32	88	5.08	81.8	74.7
Coker 100 Wilt	1.08	1 3/32	—	4.60	78.7	77.3

COTTONS SELECTED were diversified as to fiber characteristics and reported "nepability." The study showed that the fibers with greatest fiber diameter, as Rowden and Deltapine 15, showed the fewest neps during processing.

ROUGH GINNED SMOOTH GINNED

TYPE OF GINNING materially affects nep formation. Smooth-ginned cotton forms fewer neps in processing than rough-ginned cotton.



ACALA DELTAPINE ROWDEN SXP

COTTON VARIETY also affects ability to form neps. Coarser cottons, Rowden and Deltapine (center two), form fewer neps under same processing conditions than Acala P18C or SXP.

Less Opening Means Fewer Neps

IN OPENING AND PICKING, the severity of the treatment that fibers undergo is the major cause of fiber tangling—and fiber tangling means neps. Other factors, as machines used, condition of machines, and control of fibers are also important in nep formation.

Select Machines Carefully

If you're in a position to install new equipment, you're in a position to reduce formation of neps. Machines should be selected that give the opening and cleaning desired with the least amount of beating. The opening theory for cotton cleaning (which says, briefly, to clean cotton, do a good job of opening and dirt will fall out) should be kept in mind in machine selection.

Don't Carry Cotton Through Pipes Any More Than Is Necessary

Mills that are putting the opening rooms on the opposite side of the wall from the picker room are smart. When cotton is carried by air suction or blown through pipes, neps are formed every foot of the way. These pipes are often uneven on the inside, full of nicks, joints, and dents that cause air currents to eddy. When air currents eddy, cotton fibers roll around and become tangled, and neps are formed.

Control Air Inside Machines

When cotton is permitted to roll around inside opening and/or picking equipment, especially between the beater chamber and screen, the fibers tangle and neps are formed. To prevent neps, control air currents. Move the cotton from point to point without delay.

Work Your Cotton as Little as Possible

Harsh treatment of cotton forms neps because the friction of fibers passing each other causes them to tangle. If you run cotton through a picker over and over again, you'll eventually end up with a total mass of neps. To reduce neps, beat cotton as gently as possible and as little as possible. Cut beats per inch to the practical minimum.

Keep Your Machines In Top Condition

Any machine part, moving or still, that touches cotton should be smooth. Neps are formed in hoppers when a nick or rough spot in the wall of the hopper causes cotton to collect and string out.

Moving parts especially should be kept in good condition. Beater blades should be sharp and free of nicks. Rounded edges won't pull fiber from the feed roll. Grid bars should be smooth, shiny, and free of rust. On Kirschner beaters, pins should not be bent or hooked.

Do these things, and you'll form fewer neps in opening and picking.

These Experiments Point Up Effect of Opening and Picking on Neps

Effect of Various Degrees of Opening and Picking

In an experiment on 24 laps processed with various degrees of opening, on pickers with two and three blades, and at different rates of production, it was found that less opening meant a lower nep count. Less opening also produced yarn with higher strength and better appearance.

NO OPENING OPENING

UNOPENED COTTON that was hand separated and placed on card feed, when spun into yarn, left, had fewer neps than yarn (right) made from cotton that had passed through one vertical and two lattice openers at 700 lb.-per-hr. rate,

Pickers with two beater sections produced fewer neps, more even yarn, and better-appearing yarn than pickers with three beaters.

A production rate of 1,400 lb. per hr. also gave fewer neps and more uniform yarn than production rates of 700 and 350 lb. per hr.

Beater speeds were not changed with the production rate, so that at higher productions, fibers received less beating.

Superior Cleaner Does Not Increase Neps

Up to three passages of cotton can be made through the Superior cleaner without a significant change in number of neps. But on the fourth passage, in this experiment, neps increased greatly.

Yarn strength also varied only slightly in yarns made from cotton with one, two, and three passages. Cotton with only one passage did produce the weakest yarn, however. Yarn appearance decreased with the number of passages.

The following table summarizes results of this experiment.

Passes through Superior	1	2	3	4
Neps per 100 sq. in.	174.2	182.3	153.9	321.9
Grain sliver	57.6	55.5	52.1	55.6
Neps per gram	672	730	656	1284
Card strips (lb.)	0.653	0.751	0.543	0.714
Yarn no.	29.8	30.1	28.9	28.8
TPI	22.9	22.9	22.9	23.2
C x S prod. (30s)	1740	1803	1801	1806
Shadowgraph	Best			Worst

Shirley Analyzer Test Shows Effect of Air Currents

In one test, samples of cotton were run through a Shirley Analyzer, first with normal air currents, and then with air currents cut off. Cotton processed with normal air currents had 42.1 neps per grain. Cotton processed without normal currents had 152.4 neps per grain, an increase of 262%.

This study points to the conclusion that the uncontrolled air currents present when normal (and controlled) currents were cut

off permitted the cotton to whirl around inside the machine and to tangle into neps.

In Picking, Kirschner Beaters Generally Produce Fewer Neps

In experiments conducted on various cotton varieties, processing cotton through one Kirschner beater on a breaker picker generally produced fewer neps than processing similar stock through the breaker picker equipped with one 3-blade beater. The exception was Rowden cotton.

On Deltapine 14

A Deltapine 14 cotton, 1-1/16 in., was fed by hand into the feed roll of a breaker picker equipped, in one case, with an 18-in. 3-blade beater, and, in the other, a 16-in. Kirschner beater. A 14-oz. lap was made. Beater speeds were 920 rpm. Fan speeds were 1,200 rpm. Blows per inch were 51 for the blade beater, 55 for the Kirschner.

Stock processed through the blade beater had 250 neps per gram. Stock processed through the Kirschner beater had 160 neps per gram. Kirschner-beater-processed yarn also had a higher count-strength product (1,608) than the blade-beater-processed cotton (1,541). Appearance of yarns produced from both was the same, but uniformity of the Kirschner-processed yarn was better.

On Acala 4-42

The Kirschner-type beater also appeared to have some advantage over the blade beater in processing Acala 4-42 cotton by causing fewer neps and producing stronger yarn.

In this experiment, three laps of 20 lb. each were made and each was processed as follows:

1. Two passages through blade beater.
2. One passage through one blade beater followed by one passage through one Kirschner beater.
3. One passage through two Kirschner beaters.

The Kirschner beaters produced fewer neps (385 per gram) than either the blade-Kirschner combination, (414 neps per gram) or the blade beaters alone (407 per gram). Yarn strength of Kirschner-processed stock had a CxS product of 2,385 as compared to 2,277 for the blade-beater-processed cotton. There was no significant difference between the samples in card waste produced.

On SXP Cotton

The Kirschner beater again produced fewer neps than the blade beater on 1½-in. SXP cotton.

In this experiment, a lap of SXP was run through a finisher picker equipped with 3-blade beater for several tests, and a Kirschner beater for other tests. Speeds and settings for all tests were the same.

SXP cotton processed on the blade beater and later made into yarn showed 1,281 neps per gram, and a yarn count-strength product of 2,387. The stock processed through the Kirschner beater showed 1,058 neps per gram; and the yarn showed a count-strength product of 2,417.

On Rowden Cotton

Contrary to findings on other cottons, the blade beater produced fewer neps than the Kirschner beater in processing Rowden cotton.

In this test, 40-lb. laps of 1-in. Rowden cotton were processed through pickers equipped with 3-blade or Kirschner beaters. Speeds and settings were the same in all tests.

The blade beater produced 245 neps per gram as compared to 272 neps per gram for cotton run through the Kirschner beater.

The Kirschner-processed cotton, however, produced a slightly stronger yarn (CSP 1,358) of better appearance than the blade-processed stock (CSP 1,327). Card strips were about the same for both types of beaters.

In one experiment conducted with the cooperation of a mill, cotton opened on the mill's opening line was split into two lots. The first lot was run through the picker at the mill—two 2-blade beaters and one Kirschner beater. The other lot was given both one and two passes through a finisher picker at the School of Textiles. This finisher picker had only one Kirschner-beater section. Laps from the mill and those produced at the School were then made into yarn at the School.

The nep count of the cottons picked at the School was lower (135 per 100 sq. in.) than the count of cotton picked by the mill (240 neps per sq. in.). The nep count for the laps made at the School is for one and two passes combined.

Thus, it is indicated that Kirschner beaters are better than blade beaters in reducing neps. The count-strength product of yarn produced from cotton processed at the School was slightly lower than for the yarn produced from the mill-made laps. Appearance of yarn made from cotton processed at the mill was slightly lower than for yarn made from cotton processed at the School.

Although the Kirschner beater in most cases produced fewer neps and stronger yarn than blade beaters, the differences are not considered significant. Therefore, mills now using pickers with one blade beater should not necessarily replace the blade beater with a Kirschner beater. It is perhaps more important that blades of blade beaters be kept sharp and free of nicks and that air currents be so controlled that cotton does not remain and roll around in the passage from the beater chamber to the screen section.

Here's How the Tests Were Made

Over a three-year period, research men at the School of Textiles, North Carolina State College, ran samples of the cottons listed in the accompanying chart through full sized production equipment for all processes from openers to spinning frames. Processing conditions duplicating mill conditions were maintained as closely as possible.

To localize the factors causing neps, samples were run through all these machines in the sequence and at speeds and settings normally used by mills. However, in each test, one process (especially in opening), one factor (as type of beater in picking), or one speed or setting was varied. In the latter two cases, speeds and settings were varied from less than normal to more than normal.

In thousands of tests, cotton was run through the equipment with one of these factors varied, nep counts were made when possible, and yarns were spun from the stock. These yarns were then boarded and graded.

The variation in nep counts, yarn strength, yarn appearance, waste, etc., were recorded for each sample processed.

This report summarizes the results of these experiments.

CARDING TESTS were made by putting a variable-speed drive on rotating parts so that speeds could be individually varied.

These CARD SPEEDS and SETTINGS Can Reduce Neps

Speed:

Lickerin	800 rpm.
Cylinder	165 rpm.
Flats	1.6 in. per min.
Doffer	Variable, depending on production and quality desired, from 5 to 35 rpm.

Settings:

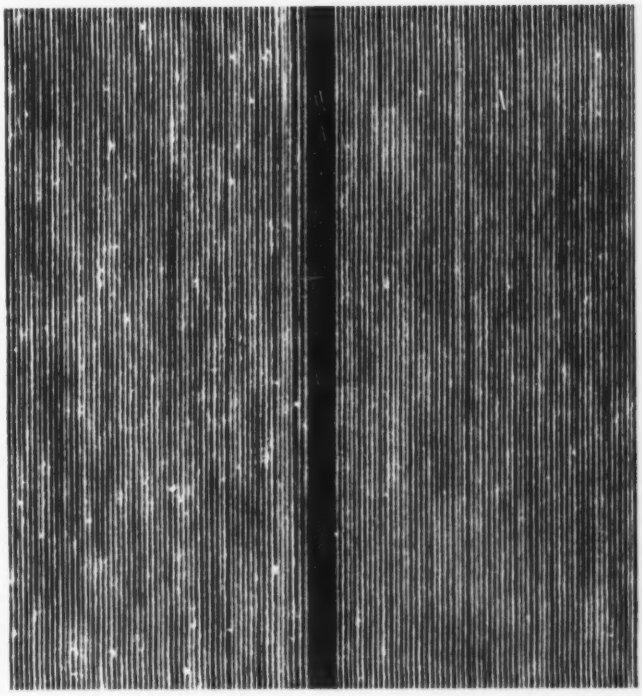
(thousands of an inch)

Feed plate to lickerin	7
Mote knife to lickerin, top	7
Mote knife to lickerin, bottom	7
Angle of mote knife	30°
Lickerin to screen, front	17
Lickerin to screen, back	17
Lickerin to screen, bars	17
Lickerin to cylinder	7
Screen to cylinder:	
Front	187
Center	68
Back	29
Flats to cylinder:	
Back	7
Int.	7
Int.	7
Int.	7
Front	7
Flat-stripping comb	15
Back knife plate:	
Lower edge	22
Upper edge	22
Front knife plate:	
Lower edge	34
Upper edge	34
Doffer to cylinder	5
Comb to doffer	17

Here's how the recommended speeds and settings compared with normal speeds and settings in producing neps on Acala P18C Cotton

A 14-oz. lap of Acala P18C was processed through a breaker and finisher picker into a 14-oz. lap. A 55-gr. sliver was produced and spun into 30s yarn.

	At normal speeds and settings	At recommended speeds and settings
Neps per 100 sq. in.	146	31
Neps per gram	513.8	129.2
Sliver (lb.)	27.25 (91.86%)	16.87 (90.67%)
Waste in lb.		
Cylinder	0.351 (1.18%)	0.185 (0.99%)
Doffer	0.036 (0.12%)	0.033 (0.18%)
Flats	1.098 (3.70%)	0.448 (2.41%)
Motes	0.930 (3.14%)	1.070 (5.75%)
Skein break (lb.)	65.78	74.99
Yarn count	27.35	29.96
TPI	22.08	20.88
Evenness:		
Peaks in	144.6	83.4
Integrator	24.8	14.0



NORMAL RECOMMENDED

YARN SPUN AT RECOMMENDED SPEEDS AND SETTINGS had fewer neps, higher strength, and better appearance than yarn spun at normal speeds and settings.

These Card Settings Were the Starting Point

The results given in this report were obtained by successively changing one speed or setting, processing cotton usually for an 80-min. run, making a nep count, and spinning yarn from the sliver produced. The speeds and settings given below are the ones normally used by cotton mills and the one used for all speeds and settings in each experiment except for the one that was varied usually from less than normal to more than normal.

Settings:	Setting in 1/1000ths of an inch
Back plate:	
Lower edge	29
Upper edge	29
Flats to cylinder:	
Back	10
Intermediate	10
Intermediate	10
Intermediate	10
Front	10
Front knife plate:	
Upper edge	22
Lower edge	29
Doffer to cylinder	7
Cylinder screen to cylinder:	
Front	187
Middle	68
Back	29
Feed plate to lickerin	10
Lickerin to cylinder	7
Lickerin screen:	
Front	29
Bars	12
Nose	187
Mote knives to lickerin:	
Bottom	17
Top	22
Angle of mote knife	15°

Speed:	Speed in rpm:
Lickerin speed	430
Cylinder speed	165
Doffer speed	10
Flat speed, in./min.	2.7

Proper Card Speeds and Settings Can Not Only

Memo:

Careful study and application of the information on this page is reported to be saving one mill about $680 per card per year through higher production and lower waste. In a mill with about 370 cards, that's OVER A QUARTER OF A MILLION DOLLARS A YEAR!

CARDING IS THE KEY OPERATION in the reducing of neps because the card is a precision machine with moving parts that can be adjusted to each other to within a few thousandths of an inch. This study of neps shows that proper carding can not only cut down nep formation but raise production and improve yarn quality as well. Other factors than speeds and settings are important, too, as good machine condition and frequency of stripping and grinding.

Keep the Card in Good Condition

As in opening and picking, good machine condition can do much to prevent neps. Surfaces in contact with the cotton, as lap guides, lap rolls, feed rolls, etc., should be smooth and free of nicks, rough spots, splinters, or rust. Wire on lickerin, cylinder, and doffer must be kept sharp and free of defective places. Fillet should be kept tight. Grinding should leave wire sharp and free of hooks. Mote knives, screens, and plates must be smooth and free of nicks.

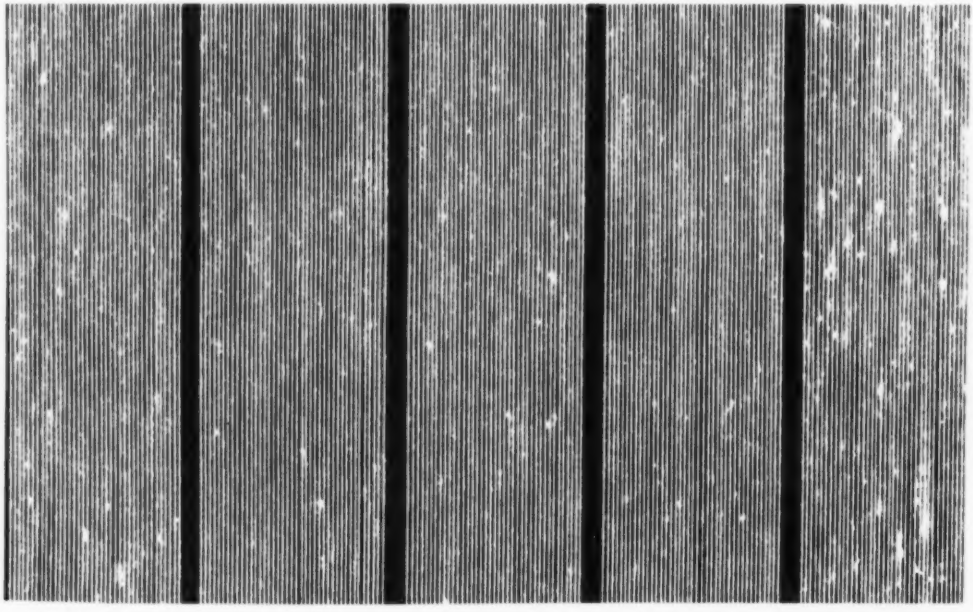
Speed of Lickerin Key to Fewer Neps

Proper synchronization between lickerin speed and the standard cylinder speed of 165 rpm. can not only reduce nep formation, but will permit raising of card production as well.

A large number of experiments were carried out on a cotton card equipped with a variable-speed drive on cylinder, lickerin, and doffer. Thus the speed of any of these elements alone or in combination could be varied.

The speed of the lickerin was found to be the key factor in reducing the number of neps formed and in improving yarn appearance, strength, and evenness. A lickerin speed of about 800 rpm. gave the best results with a cylinder speed of 165 rpm. Yarn quality improved steadily at speeds up to around 800 rpm., then decreased at 900 rpm. because the surface speed of the lickerin exceeded that of the cylinder.

Fewer neps can also be obtained by reducing doffer



200 rpm. 400 rpm. 600 rpm. 800 rpm. 900 rpm.

LICKERIN SPEED of 800 rpm. gave better-appearing yarn in test of varying lickerin speed from 200 to 900 rpm.

Reduce Neps But Raise Production and Improve Yarn Quality

speed, as is well known by carders. This improvement is made, however, at the expense of card production.

If the lickerin speed is raised, an improvement in neps occurs. If the initial nep count was acceptable, then card production can be raised and the previously acceptable nep count maintained. For example, if at a lickerin speed of 430 rpm. and a doffer speed of 5 rpm., the nep count was 30 per 100 sq. in., the same nep count might be obtained at a higher production level by raising the lickerin speed to 800 rpm. and doffer speed to 10 rpm. However, at a lickerin speed of 800 and a doffer speed of 7 rpm., for example, the nep count might be 20. Thus the carder is not only raising production but is improving yarn quality as well. Other factors than speeds are involved however, as settings and angle of mote knives, and these are discussed in other sections of this report.

Here's Why Higher Lickerin Speeds Reduce Neps

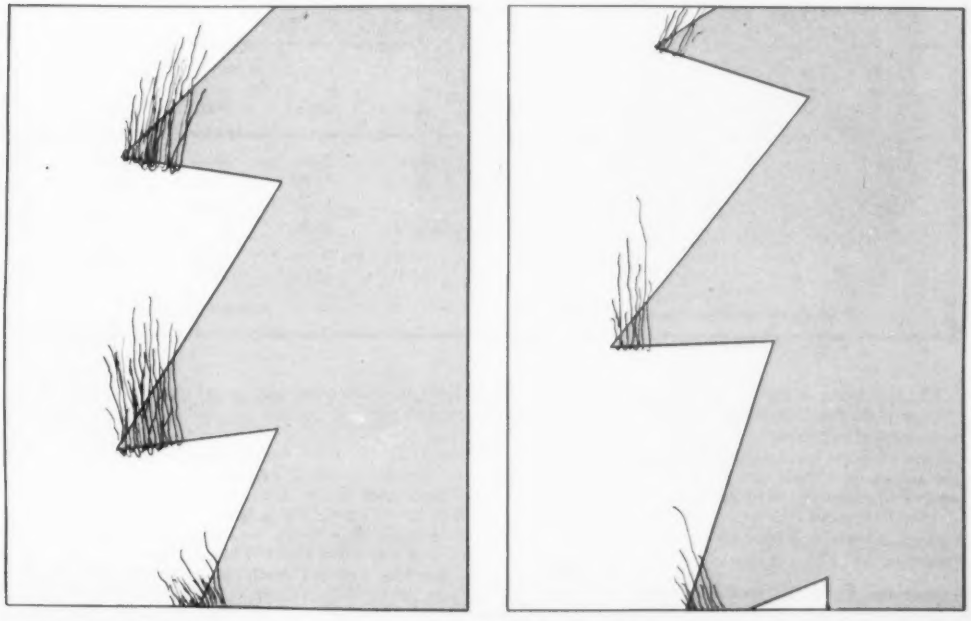
Neps are believed to be formed between the lickerin and cylinder because of the difference in surface speeds between lickerin and cylinder at normal speeds. At a normal lickerin speed of 430 rpm. and a cylinder speed of 165 rpm., the ratio of the cylinder-surface speed to the lickerin-surface speed is about 2.1 to 1. Thus, as fibers are stripped by the cylinder from the doffer, they are compressed. This compression, as previously stated, is not internal, but rather an end-to-end compression that causes tangling.

By speeding the lickerin from 430 rpm. to around 800 rpm., the ratio of the cylinder-surface speed to the lickerin-surface speed is reduced to about 1.1 to 1. Thus there are fewer fibers per lickerin tooth, and a better distribution of fibers over the surface of the cylinder as well as less "compression" of fibers is achieved. Mills should experiment with lickerin speeds to determine at what point, usually between 800 and 900 rpm., the 1.1 to 1 ratio is achieved. If the ratio is less, the lickerin starts to strip the cylinder, and more neps than before are formed.

If higher production is desired, the lickerin speed must be raised. When the doffer speed is raised from 5 rpm. to 10 rpm., for example, the feed is doubled. As shown in the table below, the average number of fibers per lickerin tooth is doubled. Unless the lickerin speed is raised, fibers are deposited on the cylinder in bigger clumps and tend to be embedded in the wire. If this happens, cylinder waste goes up.

This Table Tells the Story

Doffer speed, rpm.	10	5	10
Cylinder speed, rpm.	165	165	165
Flat speed, in. per min.	2.5	2.5	2.5
Lickerin speed	430	430	860
Lap fed, yd. per hr.	12	6	12
Average fibers per lickerin tooth	2	1	1
Ratio of surface speed of cylinder to lickerin	2.1 to 1	2.1 to 1	1.1 to 1



AT HIGHER LICKERIN SPEED, right, average number of fibers per tooth is lower, thus fiber is distributed more evenly on the cylinder.

Here Are The Results of Significant Experiments

Effect of Card Productions and Lickerin Speeds -- Deltapine 15

Variable				Delivery and Waste in Pounds					
Doffer rpm.	Lickerin rpm.	Neps per 100 sq. in.	Neps per Gram	Sliver	Cylinder	Doffer	Flats	Motes	Total
5	430	8	34	17.625 (95.13)	0.139 (0.75)	0.014 (0.07)	0.555 (3.00)	0.195 (1.05)	18.528 (100.0)
5	800	10	41	17.624 (94.40)	0.122 (0.65)	0.021 (0.11)	0.535 (2.87)	0.367 (1.97)	18.669 (100.0)
10	430	20	77	19.500 (95.84)	0.207 (1.02)	0.026 (0.13)	0.485 (2.38)	0.129 (0.63)	20.347 (100.0)
10	800	12	49	16.670 (94.92)	0.197 (1.12)	0.023 (0.13)	0.436 (2.47)	0.240 (1.36)	17.646 (100.0)
15	430	31	122	18.625 (95.61)	0.264 (1,36)	0.025 (0.13)	0.456 (2.34)	0.110 (0.56)	19.480 (100.0)
15	800	21	84	16.750 (93.98)	0.245 (1.37)	0.028 (0.16)	0.429 (2.41)	0.370 (2.08)	17.822 (100.0)
25	430	75	291	16.125 (95.00)	0.330 (1.94)	0.040 (0.24)	0.396 (2.33)	0.083 (0.49)	16.974 (100.0)
25	800	63	248	15.00 (94.86)	0.330 (2.09)	0.036 (0.23)	0.326 (2.06)	0.120 (0.76)	15.812 (100.0)

(Figures in parentheses represent percentages)

Effect of Cylinder and Lickerin Speed on Mesa Acala Cotton

Cylinder Speed rpm.	Lickerin Speed rpm.	Doffer Speed rpm.	Neps per 100 sq. in.	Neps per Gram	Delivery and Waste in Pounds				
					Sliver	Cylinder	Flats	Doffer	Motes
165	800	10	153.2	595	17.500 (93.67)	0.183 (0.98)	0.470 (2.52)	0.029 (0.15)	0.500 (2.68)
250	1180	10	94.7	393.4	16.312 (91.74)	0.160 (0.90)	0.649 (3.65)	0.030 (0.17)	0.630 (3.54)
165	430	10	137.2	568.9	16.700 (94.99)	0.190 (1.08)	0.460 (2.61)	0.028 (0.16)	0.207 (1.16)

(Figures in parentheses represent percentages)

Running Time: 80 min.

The key figures in the table on the previous page are the average fibers per lickerin tooth, and the ratio of cylinder-surface speed to lickerin-surface speed. At a doffer speed of 10 and a lickerin speed of 860, fibers per tooth are one and the surface-speed ratio is 1.1 to 1. Application of these figures will not only reduce neps but raise production.

The tables above and on the next page outline the results obtained at various lickerin and doffer speeds with various cottons.

Lower Flat Speeds Can Reduce Waste

A flat speed of about 1.6 in. per min. can be used without impairing yarn quality. Needless to say, this lower speed results in a lower percentage of flat waste.

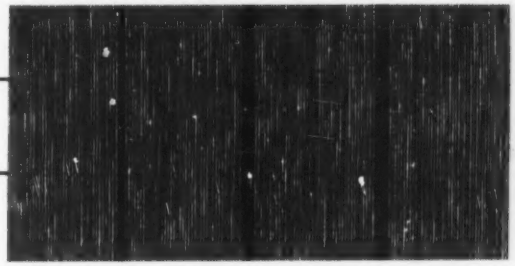
An experiment carefully carried out with colored cottons showed that after a clean flat has entered the card at the back, it is 74% loaded when it reaches the position of the second flat in contact with the cylinder. The chart on page 104 shows this rate of loading.

Since each flat is clean when it contacts the cylinder, most of the cotton that is buried deep in the flat is good, long-staple, clean cotton. An examination of the front and back of a carefully removed flat strip bears out this fact.

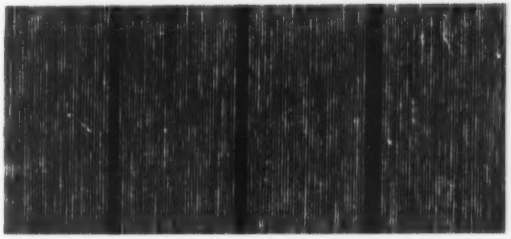
Running flats too slowly or not at all will eventually cause dirtier sliver. But experiments showed that flats can be run slower than normal without trouble. And, at the higher production rates that have been discussed, more cotton is run through the card per flat of waste produced.

on Lickerin and Doffer Speeds on Various Cottons

Skein Break	Yarn No.	CXS	TPI
65.93	28.92	1907	22.29
68.42	28.07	1921	22.89
63.40	29.80	1889	21.83
62.37	29.76	1856	20.63
64.38	29.37	1891	21.14
65.88	29.00	19 10	20.67
67.74	28.48	1929	21.39
66.53	29.63	1970	21.19

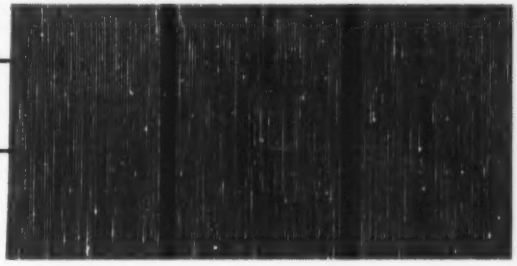


Doffer, rpm.	5	10	15	25
Lickerin, rpm,	430	430	430	430



Doffer, rpm.	5	10	15	25
Lickerin, rpm.	800	800	800	800

Total	Skein Break	Yarn No.	CXS	TPI
18.682 (100.0)	87.99	28.88	2541	21.02
17.780 (100.0)	95.14	27.82	2647	21.80
17.633 (100.0)	85.55	29.78	2548	20.94



Cylinder, rpm.	165	250	165
Lickerin, rpm.	800	1,180	430
Doffer, rpm.	10	10	10

The mill must balance the factors of less waste against quality of sliver desired to determine the flat speed used. But as a starting point, at least, try a speed of 1.6 in. per min.

Here Are Results of Individual Experiments on Card Speeds

For the record, the results of various experiments on varying the speed of individual elements of the card are summarized.

Varying Speed of Cylinder Alone Has Little Effect on Nep Formation

Running the cylinder at 150, 165, and 185 rpm. on Acala P18C cotton produced no significant difference in nep counts. The 165-rpm. cylinder speed produced the most uniform yarn.

Lickerin Speed Alone Affects Nep Count—Higher Speeds Produce Fewer Neps

Varying lickerin speed on Acala P18C and Deltapine cottons from 340 to 440 rpm. had no significant effect on nep formation or on evenness of yarns spun from the stock.

In varying the lickerin speed from 200 to 500 rpm. on Acala P18C cotton, fewer neps and less cylinder, doffer, and flat waste were produced at the higher speed.

In processing SXP cotton, neps and cylinder and doffer waste and flat strips were less as lickerin speeds were raised from 200 to 800 rpm. At 900 rpm. lickerin speed, neps increased.

A lickerin speed of 885 rpm. gave the lowest nep count on Deltapine 14 cotton. The speed was varied in this test from 200

Here Are The Results of Significant Experiments

Comparison of Slow Doffer Speeds vs. Fast Lickerin Speeds -- Acala 4-42

Variable	Neps per 100 sq. in.	Neps per Gram	Delivery and Waste in Pounds					
			Sliver	Cylinder	Doffer	Flats	Motes	Total
Doffer 10 Lickerin 430	107	411	19.125 (94.76)	0.265 (1.31)	0.034 (0.17)	0.469 (2.32)	0.290 (1.44)	20.183 (100.0)
Doffer 5 Lickerin 430	76	307	17.130 (93.22)	0.186 (1.01)	0.023 (0.13)	0.616 (3.35)	0.421 (2.28)	18.376 (100.0)
Doffer 10 Lickerin 860	73	302	16.700 (91.94)	0.188 (1.03)	0.031 (0.17)	0.425 (2.34)	0.821 (4.52)	18.165 (100.0)

(Figures in parentheses represent percentages)

Comparison of Low and High Production -- Rowden

Doffer Speed rpm.	Lickerin Speed rpm.	Neps per 100 sq. in.	Neps per Gram	Delivery and Waste in Pounds					
				Sliver	Cylinder	Doffer	Flats	Motes	Total
5	430	15	66	18.000 (91.85)	0.161 (0.82)	0.028 (0.14)	0.575 (2.90)	0.840 (4.29)	19.599 (100.0)
10	800	19	81	16.250 (91.47)	0.183 (1.04)	0.037 (0.20)	0.360 (2.02)	0.935 (5.27)	17.765 (100.0)
10	430	26	113	16.100 (93.85)	0 207 (1.20)	0.034 (0.20)	0.380 (2.21)	0.435 (2.54)	17.156 (100.0)

(Figures in parentheses represent percentages)

Processing Rowden 1-in. Cotton at Doffer Speed of 35 rpm., Lickerin Speed of

Doffer Speed rpm.	Lickerin Speed rpm.	Delivery and Waste in Pounds					
		Sliver	Cylinder	Doffer	Flats	Motes	Total
35	800	15.100 (94.73)	0.280 (1.76)	0.036 (0.22)	0.250 (1.57)	0.274 (1.72)	15.940 (100.0)
10	430	16.100 (93.85)	0.206 (1.20)	0.034 (0.20)	0.380 (2.21)	0.435 (2.54)	17.156 (100.0)

(Figures in parentheses represent percentages)

to 1,000 rpm. Up to 885 rpm., the nep count decreased. Beyond 885 rpm. the count started to increase. Cylinder, doffer, and flat strips were also lowest at the 885-rpm. lickerin speed, and strength of yarn produced was highest.

On Acala P18C cotton, 885 rpm. was also the critical speed. Below and above this speed, more neps were formed. Cylinder, flat, and doffer strips were also lowest at this speed, and strength of yarn produced was highest for the series.

Raising Doffer Speed Alone Produces More Neps

In tests on Acala P18C cotton, raising card production by increasing the doffer speed alone from 10 to 25 rpm. caused an increase in neps formed in all cases. There was little effect on yarn evenness, appearance, or strength at all speeds in most cases.

Varying Flat Speeds May Affect Neps, Depending on the Cotton Used

Slowing the flat speed to 0.34 in. per min. on Coker 100 Wilt cotton produced a slightly stronger and more uniform yarn, but no difference in neps from those made at normal flat speeds. At this speed, however, the percentage of flat strips removed dropped from 3.1 to 0.7% of the weight of the lap fed.

Running flats at 1.74 and 2.84 in. per min. resulted in fewer neps and 0.4% less flat waste at the lower speed on Deltapine 14 cotton. No difference in yarn appearance.

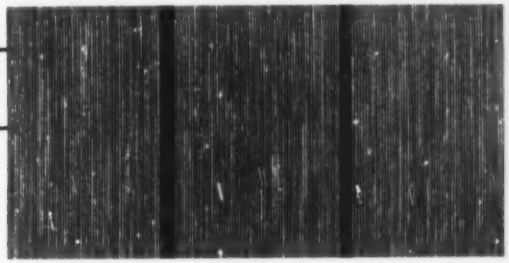
Varying the flat speed on SXP and Deltapine cotton from 3 to 9 in. per min. resulted in formation of more neps at the higher speeds. There was no loss of strength or appearance of the yarns spun from stock run with the higher flat speeds. Flat waste was about doubled for both cottons as flat speeds were increased from 3 to 9 in. per min.

Mote Knife, Doffer, and Flat Settings Critical

The three card settings that are most critical in reducing neps are angle of mote knife, flat to cylinder setting, and

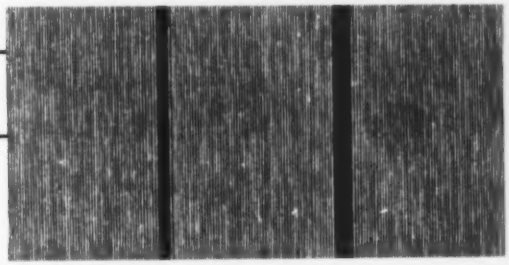
on Lickerin and Doffer Speeds on Various Cottons

Skein Break	Yarn No.	CXS	TPI
80.56	30.01	2418	19.48
79.82	30.10	2403	20.53
85.68	29.24	2489	20.51



Doffer, rpm.	10	5	10
Lickerin, rpm.	430	430	860

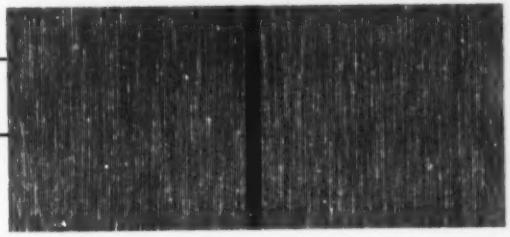
Skein Break	Yarn No.	CXS	TPI
28.93	62.88	1819	19.83
28.50	62.40	1778	19.78
29.61	64.34	1905	18.79



Doffer, rpm.	5	10	10
Lickerin, rpm.	430	800	430

800 rpm.

Skein Break	Yarn No.	CXS	TPI
58.35	29.71	1734	20.29
58.79	29.72	1747	20.84



Doffer, rpm.	35	10
Lickerin, rpm.	800	430

doffer to cylinder setting. Other settings may affect neps, too, and the results of experiments that support the recommended settings in the chart on page 97 are given in the following pages.

The larger-than-usual mote-knife angle of 30° is believed to have reduced neps because it allows the tufts of cotton to pass the mote knives more easily.

Closer lickerin-to-screen settings, 0.017 in. at the nose, are believed to control air currents better than the normal setting of 0.187 and they reduce waste as well.

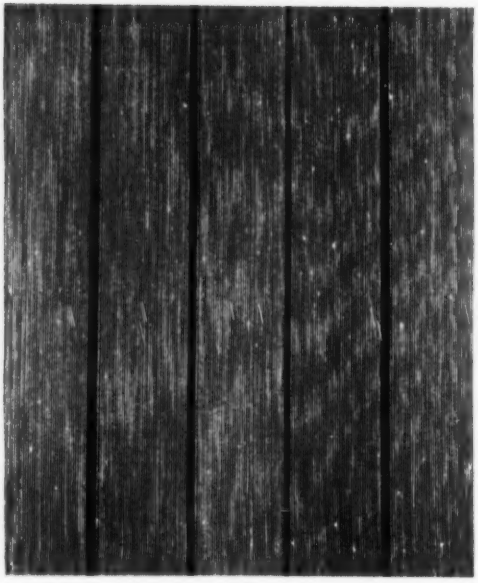
While flat speed has more effect on waste than neps, flat settings are critical in preventing neps. Flats should be set as close to the cylinder as mill conditions permit; as close as 0.007 in. if possible. The wider the setting, the greater the opportunity for fibers to get out of the control of the wires on flats or cylinder. If settings are too wide, fibers roll and tangle, thus neps are formed.

The doffer should be set as close to the cylinder as possible to keep the cylinder stripped. Getting the cotton off the cylinder prevents the fiber reworking that causes neps.

To help the doffer, open up the knife plate to an 0.034 in. setting at top and bottom. This setting will help fibers to stand out so the doffer can remove them easily.

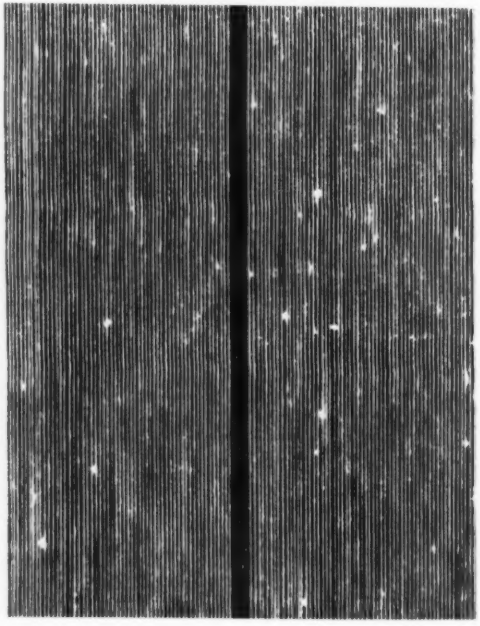
Wider Flats-to-Cylinder Settings Cause More Neps—Use as Close a Setting as Possible

Numerous experiments on the effect of flat-to-cylinder settings



0.007" 0.010" 0.015" 0.020" 0.025"

CLOSER FLAT SETTINGS, left, gave better-appearing yarn because fewer neps were formed than at wider settings.



0.007" 0.010"

CLOSER DOFFER-TO-CYLINDER SETTING of 0.007 in., left, gave fewer neps than 0.010-in. setting at right because doffer did better job of stripping cylinder and prevented the reworking of fibers that can cause neps.

on all types of cottons showed conclusively that the wider the setting, the more neps are formed.

In these tests on Deltapine 14, Acala P18C, Rowden, SXP, and Acala 4-42 cottons, flats-to-cylinder settings were varied from 0.007 to 0.025 in. Settings were also varied from wider in front to narrower in back, and vice versa.

In all tests, the fewest neps were produced at the closest setting, and the greatest number of neps at the widest setting. Also, in practically all cases, yarn made from cotton carded at the closest flat-to-cylinder setting was the strongest, best appearing, and most uniform.

In some tests, the wider settings allowed more seed-coat fragments to enter the sliver. Apparently, with closer settings, these fragments became embedded in the wire.

Front and Back Knife-Plate Settings Do Not Affect Neps

In tests in which the front-knife setting was varied from 0.016 (upper) and 0.022 (lower) to 0.034 at both top and bottom, no conclusive results were obtained. On Deltapine 14 cotton, the setting of 0.028 (top) and 0.034 (bottom) produced fewer neps but also produced the weakest and most uneven yarn.

On Coker 100 Wilt cotton, the best setting from the standpoint of neps and other yarn properties was: back knife plate, 0.022 in. at top and bottom edges; front knife plate, 0.034 in. at top and bottom edges.

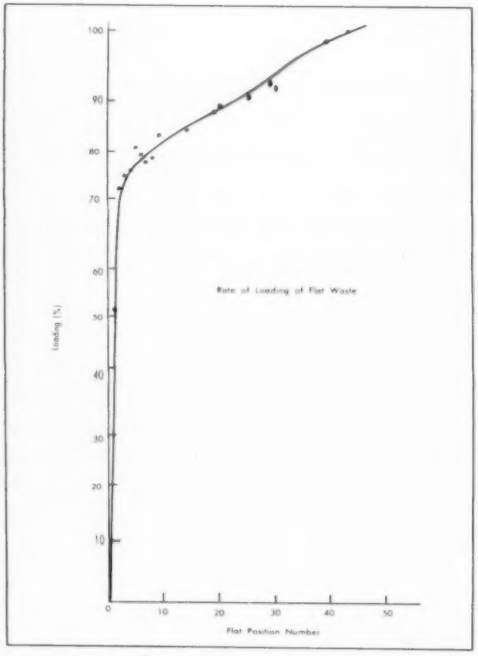
Feed Plate to Lickerin Setting Can Affect Nep Formation

Acala P18C cotton, when processed on the card with feed plate-to-lickerin settings of 0.007, 0.010, and 0.017 in., produced fewer neps, higher yarn strength, and better appearance at the 0.007 setting.

Cylinder-to-Screen Settings Equal at All Points Produce Fewer Neps on Some Cottons

Varying the cylinder-to-screen settings from 187½ (front) —68 (center) —29 (back) to 187½—187½—68 in processing Deltapine cotton had no particular effect on formation of neps or yarn strength. The wider setting improved appearance.

On SXP and Rowden cottons, settings of 187½ (front) —58 (center) —29 (back) produced superior results on both cottons.



FLATS ARE ABOUT 74% LOADED after entering the card clean and reaching the position of the second flat from the back of the card.

Other Carding Factors May Also Affect Nep Formation

Newly Ground Wire Reduces Neps

Acala P18C, 1-1/16-in.; Acala 4-42; and Deltapine 14, 1-1/16-in. cottons were run before and after grinding on a card that had not been ground for about 300 operating hours. All slivers produced were made into yarn in the usual manner.

In running Acala 4-42, card grinding can reduce nep formation considerably. Samples of Acala 4-42 cotton were run before and after grinding. Before grinding, the nep count was 507 neps per gram. After grinding, the nep count was 134 neps per gram. Strength of the yarn produced on the card immediately after grinding was slightly lower, but evenness and appearance were considerably better. Delivery of sliver was raised about 1% after grinding because of a 1% reduction in waste.

Neps in Acala P18C were also lower (803 per gram) after grinding than before (927 per gram). However, neps in Deltapine were not significantly different after grinding. Both these cottons showed an improvement in strength and appearance of yarns after grinding.

Neps Increase With Length of Time Between Strippings

Several experiments on Deltapine 14 cotton showed conclusively that neps increased steadily with running time after stripping up to 210 min. running time, then turn upward sharply.

The accompanying chart shows the increase in neps per gram with increasing running time.

Similar results were obtained in running Acala P18C cotton, except that there was a sharper rate of increase in neps during the first 90 min. There was a constant rate of rise to 3½ hr., and a sharper rate of rise thereafter.

Appearance of yarn spun from these samples showed a definite decrease in grade with increasing running time. The count-strength factor also decreased slightly.

Lap Weight Can Affect Nep Formation

Feeding a heavier lap may have a slight effect on nep formation in Deltapine 14 but has no effect one way or the other on Acala P18C 1-1/16-in. cotton.

Laps of Deltapine cotton weighing 13, 19, and 26 oz. per yard were fed to the card. The lickerin speed, in two sets of experiments, was 430 rpm. and 800 rpm.

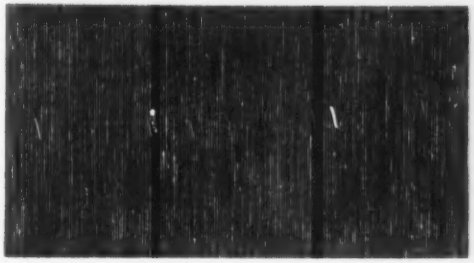
The table below shows results obtained:

Deltapine 14

Lap Wt. (oz.)	Lickerin speed (rpm.)	Neps per gram
13	430	81
19	430	70
26	430	65
13	800	67
19	800	61
26	800	49

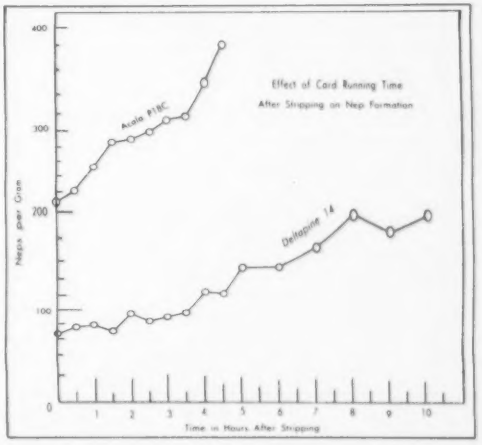
Waste was slightly higher when the heavier laps were fed because of increased loading of the cylinder and flats. There were no significant differences in strength or evenness of yarns made from all samples.

In the experiment on Acala P18C cotton, laps weighing 10, 14, and 18 oz. per yd. were fed. There were no trends to indicate that the different lap weights fed affected nep formation. The count-strength product of yarns spun from the heavier laps was slightly higher. Flat waste was 0.5% higher at the heavier lap weight, and delivery of sliver was about 0.5% less.

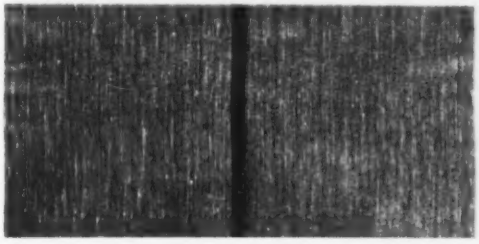


24° 18° 12°

HIGHER MOTE-KNIFE ANGLE, 24°, left, caused fewer neps than 18° or 12° settings. A 30° setting gave even better results and is recommended.



NEPS INCREASE STEADILY after stripping, but after 3½ hr. on Acala P18C and 4½ hr. on Deltapine 14, rate of increase is steeper. Note that neps in Acala are much higher all along.



Before Grinding After Grinding

SHARP WIRE REDUCES NEPS, as shown by this comparison of yarns spun from cotton carded before and after grinding of card wire.

Card Draft Does Not Affect Neps

Increasing card draft from 66 to 132 does not produce any particular trend in nep formation. There is a noticeable increase in yarn strength with higher card draft, but there is little or no effect on yarn appearance or evenness.

Lickerin-Wire Does Not Affect Nep Formation

In tests run with metallic lickerin wires of varying fineness, no particular effect was discernible.

The table below shows results obtained on tests run on Coker 100 Wilt cotton.

Lickerin type	Wire No.	Teeth per sq. in.	Neps per gram
Cotton	4.25	34	75
Cotton	3.50	28	67
Cotton	6	48	66

The percentage of motes and fly increased as the wire became finer.

Apparently the type of wire had no significant effect on loading of cylinder, doffer, and flats.

The finest wire in the series produced the lowest-strength yarn, but its appearance and evenness were superior to yarns produced by other wires.

Type of Lickerin Screen Does Not Affect Nep Formation

Tests run on carding 14-oz. laps of Coker 100 Wilt cotton carded at normal speeds and settings on a card equipped with a completely blank screen, a regular screen, and a perforated screen showed no significant difference in nep counts.

The blank and perforated screens, as expected, gave a higher delivery. Yarn strength was about the same for all screens. Appearance of yarn made with all screens was about the same.

But Lickerin-Screen Settings Can Reduce Neps

In tests on carding rough-ginned stock with a regular-type cotton screen and a perforated-type synthetic screen at different settings, the fewest neps were obtained on a regular-type cotton screen at settings of 0.017—0.017—0.017 in. at the front, back, and bars.

The best-appearing yarn was spun from stock carded at settings of 0.187—0.017—0.017 in. at front, bars, and nose.

The wider front setting produced the strongest yarn, but waste was higher at this setting. Thus the setting of 0.017—0.017—0.017 is recommended.

Roller-Top Card Increases Neps in Acala 4-42

Processing Acala 4-42 stock on a roller-top card produced a yarn much neppier (187 neps per gram) than yarn made from stock processed on a flat-top card (134 neps per gram). The roller-top card used was freshly ground and was run at normal speeds and settings.

Delivery of sliver of the roller-top card was about 4% higher.

Varying Angle of Mote Knives Has a Decided Effect on Neps

In tests on Deltapine cotton, varying the angle of the mote knives from 12° to 18° to 24°, the best-appearing yarn was produced with the 24° angle.

In another test on Deltapine 15 cotton in which the angle of mote knives was varied from 15° to 30°, the best-appearing yarn was produced at the 30° angle. Motes and fly were higher, flats and doffer strips were lower. Over-all card delivery was about 0.5% higher at the 30° angle.

Closer Mote-Knife Setting Reduces Neps

In tests on Deltapine and SXP cottons, tests were run at the following settings of the mote knives:

Top	Bottom
22	29
22	17
17	22
10	15
7	7

In the case of the Deltapine cotton, the 7—7 settings produced fewer neps, and also reduced motes and fly removed.

The 10—15 setting caused fewer neps on the SXP cotton, and yarns spun from fiber produced at these settings were stronger and more even. There was no significant difference in waste.

Setting of Lickerin-to-Cylinder Does Not Affect Nep Formation

Tests run on Rowden and Acala 4-42 cotton and lickerin-to-cylinder settings of 0.010 and 0.005 in. showed no significant differences in neps or waste for either setting. Yarns spun from the stock produced with both settings showed no difference in strength, evenness, or appearance.

Setting of Doffer-to-Cylinder Materially Affects Nep Formation

Tests run on Rowden, Acala 4-42, and Deltapine cottons showed a significant difference in neps at settings of 0.003, 0.005, 0.007, and 0.010 in. The closer settings produced yarns of the best strength, evenness, and appearance.

Neps Increase in Drafting on Drawing, Roving, and Spinning Frames

EXTENSIVE EXPERIMENTS on drawing, roving, and spinning frames proved conclusively that neps are formed in drafting, but the number of neps does not vary significantly with different speeds and/or settings.

Lack of fiber control again is blamed for formation of neps in drafting. Since fibers are not parallel in the card web, fibers laying crosswise are no doubt tangled by the forces of drafting. The fact that fewer neps are formed in drafting processes following breaker-drawing, processes in which fibers are more parallel in the sliver, bears out this conclusion.

The percent increase of neps in breaker drawing is about 24% and the percent increase in roving (over card-web nep count) is about 74%. Total increase in neps during two drawings and roving is about 113%. There was no relationship between the total increase in neps and roll settings or varying draft from low to high. The only effect of high drafting was that the increase occurred sooner. There was a slight increase in neps with closer settings in roving.

Spinning increases neps about 15% (based on card-web nep count), and the total increase from drawing through spinning, inclusive, was about 130%.

Through all processes, the number of neps did not vary with different speeds and settings. With high drafts, neps form earlier and may remain slightly higher.

The highest count-strength factor and the highest elongation resulted from using closer settings and lower drafts, especially in spinning, but the difference was not great.

One reprint of this report will be sent to subscribers to TEXTILE WORLD without charge.
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RESEARCH
Pays Off

"Research is too far up in the clouds for me. It can't do anything for my mill."

"Support a bunch of Ph.D.'s and laboratory assistants? I want to get something for my money!"

"Give me something practical. I want something I can use."

But RESEARCH CAN BE PRACTICAL. And research is paying off every day in some way that helps you.

In the following pages you'll get an idea of what we mean.

Credit for the research goes to the School of Textiles, North Carolina State College, where the work was done: to Southern Regional Research Laboratory, which supervised the work, and to the U. S. Dept. of Agriculture, which sponsored it.

Last year C. H. Williams, President of Swift Mfg. Co., attended the Research Clinic sponsored by the National Cotton Council, at Pinehurst, N. C. From that meeting he took home two ideas (at least). This year he came back to Pinehurst to tell the industry of the benefits of the ideas he took home the year before. E. A. Bentley, Superintendent, delivered the talk.

TEXTILE WORLD is honored to acknowledge the fine work being done by the National Cotton Council, Southern Regional Research Laboratory, and the School of Textiles, North Carolina State College. And great credit is also due Swift Mfg. Co., Columbus, Ga., for pioneering in the application of this research and for making public the results.

*We're Carding at 25 Lb. per Hr.**

- **Tests show better breaking strength and sliver variation, fewer neps**
- **Five problems encountered at higher speeds—and their solutions**
- **Carding costs are down**

By E. A. BENTLEY, Superintendent, Swift Mfg. Co.

WE'VE BEEN RUNNING 98 cards with a lickerin speed of 795 rpm., as against our normal 517 rpm., and the production on these cards is 25.5 lb. per hr. This rate represents a 62% increase in production over our normal 15.7 lb. per hr. We've run 9,000,000 pounds of cotton through cards at the increased speeds since picking up the idea at last year's Research Clinic.

Five Problems That Were Overcome

1. *Comb-box speed.* The comb-box speed had to be increased from 1,360 to 1,750 rpm. A plain-bearing box not in excellent condition wouldn't stand it; so the solution was the use of ball-bearing comb boxes. We are running overhauled plain-bearing boxes successfully, but we plan to change to ball-bearing boxes.

2. *Doffer comb.* The most serious problem was the fact that the comb itself was not a true surface from one end of the doffer to the other. At the higher speeds, an imperfect comb caused fiber to lap on the doffer or on the comb. We overhauled the combs, milled them, and ground the fingers of the comb before we riveted the blade to the comb.

3. *Feed roll.* We found that the feed roll had to be true and the weight on it correct, or serious plucking would result.

4. *Training.* It is very difficult to piece up ends at the higher speeds.

* *Based on an address delivered at the National Cotton Council's Research Clinic held in Pinehurst, N. C., Feb. 13 to 15, 1952.*

What the Laboratory Tests Showed

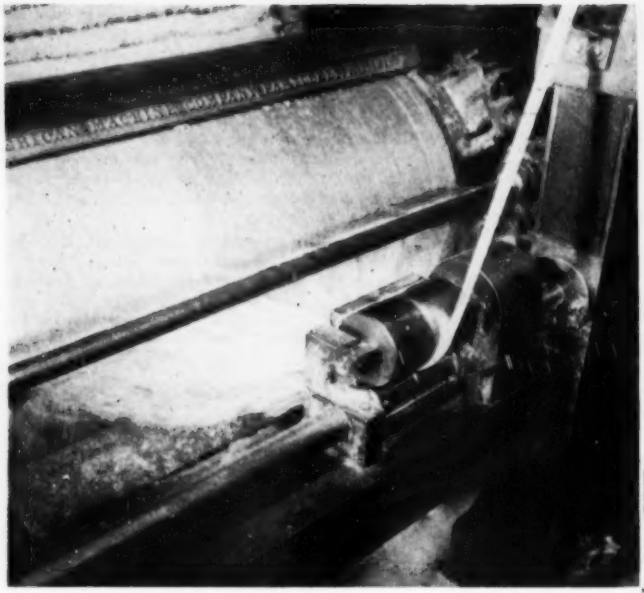
	At 15.7 lb. per hr.	At 25.5 lb. per hr.
Card-sliver variation	13.7	13.2
Drawing-sliver variation	20.0	17.0
Roving variation	42.0	39.4
Skein strength—10s yarn (lb.)	169.5	173.9
Neps per grain—card web	33.0	29.7
Fly—by Shirley Analyzer (%)		
Lint fiber	21.0	18.0
Trash	47.0	61.0
Cage loss	31.5	21.0

What Kind of Yarn?

The stock carded at 25.5 lb. per hr. was run through two processes of ball-bearing drawing and a single process of roving, made into 0.70-hk. roving, and then spun single into 10s yarn.

. . . From What Kind of Cotton?

For these tests, Swift Mfg. Co. used a part-waste mix that contained strips, 1-in. Strict Good Ordinary, 1-in. Low Middling, and $^{15}/_{16}$-in. Strict Low Middling.



AT HIGHER SPEEDS, it's harder to piece up ends. Swift set up a special training program for card tenders in order to keep front waste to a minimum.

TWO MARKS OF GOOD CARDING that are even more important when cards are run at higher speeds—(1) the 14-in. can, and (2) ball-bearing comb boxes.

How the Card Settings Compare

	At 15.7 lb. per hr.	At 25.5 lb. per hr.
Doffer to cylinder	0.007	0.007
Flats to cylinder, all stands	0.010	0.010
Feed plate to lickerin	0.017	0.012
Top mote knife to lickerin	0.015	0.012
Bottom mote knife to lickerin	0.012	0.010
Front plate to cylinder	0.034	0.022
Back plate to cylinder top	0.034	0.034
Back plate to cylinder bottom	0.029	0.029
Doffer comb to doffer	0.022	0.012
Flat comb to flats	0.034	0.034
Lickerin to cylinder	0.007	0.007
Cylinder screen to cylinder (front)	0.074	0.068
(middle)	0.034	0.034
	0.034	0.034
(back)	0.029	0.029
Lickerin screen to cylinder	0.022	0.017
Lickerin screen to lickerin	0.025	0.017

Lap weight was the same in both cases, 17 oz. Sliver weight was 60 gr.

The lickerin in each case was wound with 5-pt. wire, 8 threads per in., with the face ground to a 10-degree angle.

For a detailed report of the research that was the basis for Swift's higher card production, see "NEPS. . . . And How to Control Them," on page 91 of this issue.

We had to institute a special training program for card tenders in order to minimize waste after we made the change.

5. *Grinding and setting.* We found out that we had to have better grinding and more accurate settings at the higher speeds. Some of the more critical points were mote knives, lickerin screen, and the screen itself.

Costs Compare Favorably

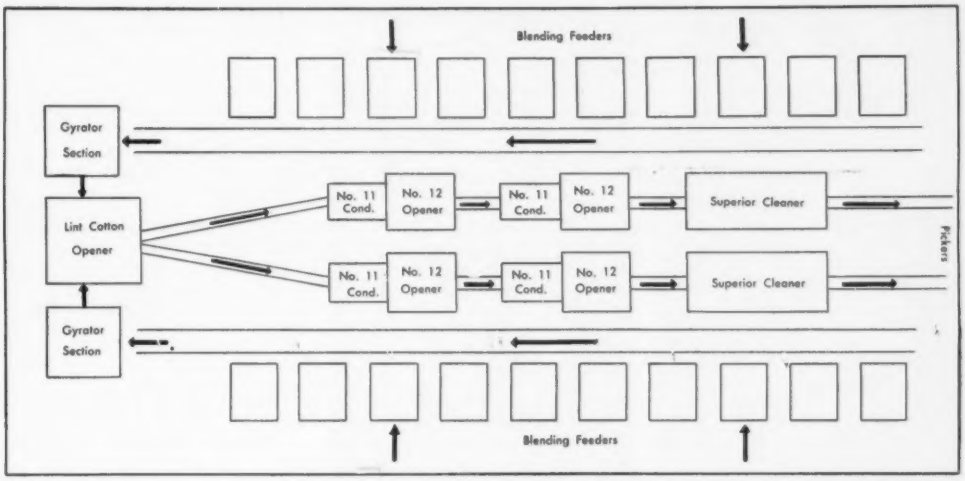
There has been no apparent deterioration in either the cylinder or doffer fillets or in the flats. The cost of supplies for this group of cards is comparable to costs on regular cards. Actually, since the rate of carding is 60% higher, the cost per pound carded is less than on regular cards.

Preliminary Results On Better Cotton

While we are not prepared to make a full report on tests with a higher grade of cotton, thus far we can say that card production may be increased 40% without any increase in neps. With the same production and a higher lickerin speed, neps will be reduced by about 11 per 150 sq. in.

Why Does Higher Lickerin Speed Help?

We believe that the sheet of fibers is laid more evenly across the face of the fillet during a single revolution than before when larger portions of fiber were delivered and, instead of being transferred, were jerked from the lickerin by the cylinder.



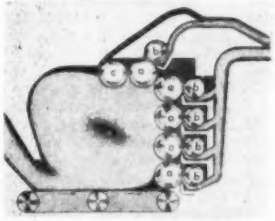
EACH OPENING LINE at Swift Mfg. Co. handles 1,100 lb. per hr., and two lines feed one of the new openers. After being split again to feed the two cleaning lines, the cotton is sent to the picker room or to the baling press for subsequent stock dyeing or blending.

We're Opening at 2,000 Lb. per Hr.*

- **The Lint Cotton Opener developed at Southern Regional Research Laboratory is doing an amazing cleaning job**
- **Total waste has been reduced**
- **Yarn quality is definitely improved**

By E. A. BENTLEY, *Superintendent, Swift Mfg. Co.*

Here's How the Lint Cotton Opener Works



COTTON IS FED AT THE LEFT and becomes part of a rapidly rotating mass actuated by the conveyor belt at the bottom of the opener and an auxiliary doffer cylinder (c).

All of the saws (a) rotate in the same direction and at the same speed. Each saw cylinder removes excess cotton from the cylinder just below it. Five doffer cylinders, combined with a slight air suction, clean the saw cylinders and throw the cotton into five chutes that come together at the machine's outlet.

Saw cylinders (a), which run at 425 rpm. are of 12-in. diameter and have 154 saws per cylinder. Separation of the saws is $\frac{7}{16}$ in. along the cylinder, and the setting between cylinders is $\frac{1}{4}$ in. Each saw has 282 teeth.

Doffer cylinders (b) run at 930 rpm. The four doffers on the side are of 9-in. diameter and are wound with No. 1 rayon wire, $4\frac{1}{2}$ teeth per in., 6 threads per in. The single doffer at the top is a 12-in. cylinder wound with No. 1 rayon wire, 7 threads per in.

WE'VE RUN $6\frac{1}{2}$-million lb. of cotton through the cotton opener developed at Southern Regional Research Laboratory and built for us by Cen-Tennial Cotton Gin Co., Columbus, Ga. The results so far indicate that we've really got something. We first learned about the opener at last year's Research Clinic.

We Got Two Surprises

One of the first things that we noticed was the immense amount of leaf and trash that fell out at the opener. This trash contained almost no fiber at all—just the lowest possible grade of leaf, stalk, and other foreign matter.

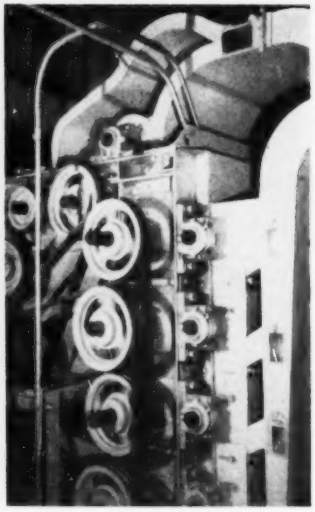
We also discovered that the opener is one of the best blenders we have in the plant. We believe that the rapid whirling of cotton inside the enclosure and the five delivery points do a better job of blending because smaller units of fiber are handled.

Some Changes Were Made In Other Processes

On the No. 12 openers, we had to change the settings on the grid bars. We finally came up with these settings

* Based on an address delivered at the National Cotton Council's Research Clinic held in Pinehurst, N. C., Feb. 13 to 15, 1952.

COTTON FLOW IS FROM REAR toward you. A very low quality of trash is deposited in the bin at the lower front of the opener. Gyrator section is at right rear.



IT RUNS ALMOST NOISELESSLY. V-belts with idler adjustment are used to drive both saw and doffer cylinders. Ball bearings are used throughout.

to prevent excessive loss of lint because of the improved opening:

Beater to grid bars—$\frac{3}{4}$ in.

Top grid-bar opening—$\frac{1}{4}$ in.

Bottom grid-bar opening—$\frac{7}{16}$ in.

The stock was run through our C-5 Saco-Lowell pickers, on which we had to close the grid bars to a $\frac{5}{8}$-in. opening. On the breaker and intermediate beater sections we brought the grid bars up to $\frac{3}{4}$ in., and to $\frac{5}{8}$ in. on the finisher section. Picking production remained at 400 lb. per hr.

Carding was done on our regular cards, with production varying from 8 to 25 lb. per hr. We checked the neps and found a slight increase with the new opener—21.5 with vs. 20.9 without, per 150 sq.in. But this small increase doesn't worry us.

For the rest of the processing, we made no changes on our:

Drawing—two processes, ball bearing

Roving—single process, 0.70 to 3.20 hk.

Spinning—single end up—8s, 10s, 16s

double end up—18s, 24s

The Future?

We haven't experimented with higher grades of cotton yet—Strict Low Middling is as high as we've gone.

Although the original research on this new opener showed that some of the beating could be eliminated in opening and cleaning lines, we haven't done anything along this line yet.

The Lint Cotton Opener can also be used to open cotton after it has been stock dyed, and we're installing one in our opening room now.

Summary of Waste Tests

OPENING	Percent: Without the new opener	Percent: With the opener
Over-all waste	3.09	3.07
Analysis of waste removed by entire cleaning line		
Lint fiber	19.8	14.6
Trash	77.6	82.6
Cage loss	2.6	2.8
Trash left after opening and cleaning	4.93	3.87
PICKING		
Over-all waste	2.64	2.21
Analysis of picker mates		
Lint fiber	17.6	14.6
Trash	80.0	83.6
Cage loss	2.4	1.8
Lint fiber at front of picker	95.4	98.4
CARDING		
Over-all waste	2.83	2.62
Invisible waste	2.16	1.84

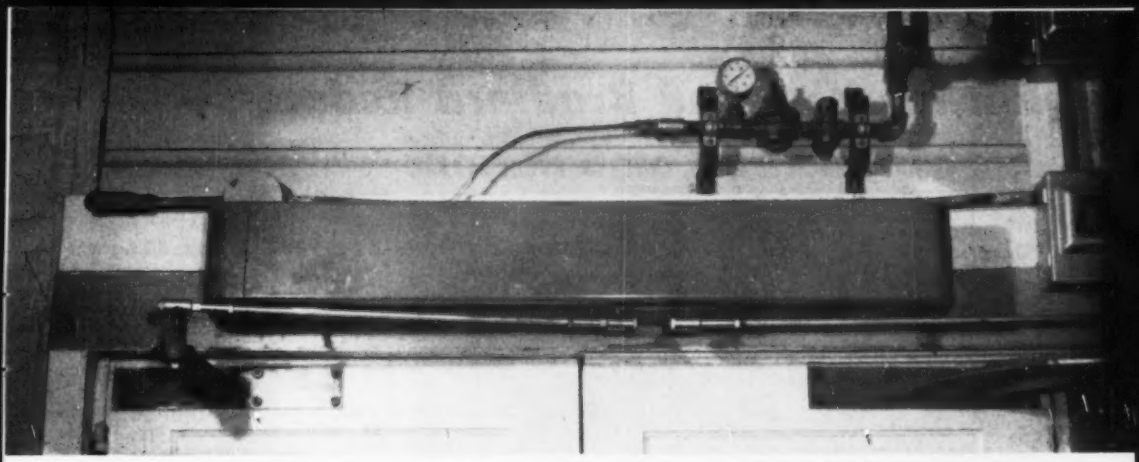
Summary of Yarn Tests

Yarn Number	Skein Strength (lb) without opener	with opener
8s	207	218
10s	164	175
16s	107	114

The SRRL opener should be of special value in preparing mechanically harvested cotton for cleaning and processing into yarn and fabrics.

The new machine is said to open baled cotton rapidly to a loose fluffy condition, similar to that of cotton lint right after ginning and before baling. This special condition permits improved cleaning and blending of the fiber in conventional textile equipment. The machine has an unusually high production rate for its size, and so helps save space in crowded mill rooms.

The principle of the opener is covered by U. S. Patent No. 2,365,793, which is available for license from the Secretary of Agriculture on a royalty-free, nonexclusive basis.



DOOR-OPENING MECHANISM is air operated after electric eye sends signal. All moving parts are oiled and adjusted on a regular schedule. Note the trap installed in the line to catch condensate. Trap was the mill's idea.

How To Get Best Results From ELECTRIC-EYE DOORS

▶ Here's what the chief engineer and the boss electrician of a prominent Alabama mill have to say about electric-eye doors and what they did to get maximum efficiency from their door openers. They've got 'em all through the mill.

Why They're Good

"We like electric-eye doors for four main reasons," said the chief engineer. The reasons he gave are these:

1. Maintenance. There's lots less door maintenance when trucks don't bang into the doors.

2. Humidity and heat. When doors close immediately after someone passes through, a lot of humidity and heat is prevented from escaping.

3. Time and effort. If you add up all the time and effort that is saved when you don't have to pull and tug at heavy doors, you've really got a saving.

4. Psychological. You can't get around the fact that employees are bound to appreciate the convenience. Mill folks get the feeling that management is doing everything to make their jobs easier.

How They're Best Set Up

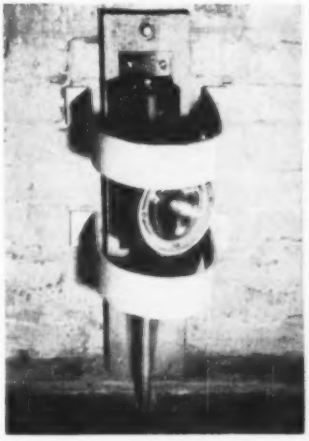
You've got to adjust the installation of electric-eye doors to your own conditions—if you want best results. Door-opening equipment in this mill is Magic-Eye, a product of The Stanley Works, New Britain, Conn.

For instance, when the light source and relays were first put in, this mill had trouble. If a little dust or dirt got on the light, there wouldn't be enough of the rays getting through to operate the relay. So there is a 30-w. light source now instead of the 2½-w. light that came with the unit.

Contacts on the original equipment were spring-operated. Mill vibration used to play tricks once in a while, but it was easy to replace these contacts with binding contacts that don't give trouble any more.

Guards should be provided for all the lights and relays. It's a lot cheaper to put good protectors up than it is to replace light units. Be careful, however, and don't let the guard interfere with the light beam.

Condensate used to give some trouble at this mill, but no more. Traps were put in at each door to catch condensate water that hampered operation of the doors.



STRONG GUARDS PROTECT light source. Note the 30-w. unit that replaced the 2½-w. source and gives trouble-free operation.

Maintenance Tips That Help

Let the same man do the maintenance work on the doors all the time.

Keep the lights going all week end to help prevent moisture from forming inside the reflectors.

Set up a maintenance program to include a regular check of these points.

1. Adjust and focus light beam.
2. Check for burned-out bulbs, particularly on doors with several rays that permit opening from several approaches.
3. Clean reflectors.
4. Check air pressure on the reducing valve.
5. Lubricate all moving parts—rollers, knuckles, joints, pins, etc.
6. Clean the air filter.
7. Remove condensate from traps at each door.

Pin Drafters and Bradford Reducers—A Cost-Saving Combination

► The president of a live-wire Canadian worsted-spinning mill tells how he has been able to realize manufacturing savings without hurting his yarn quality.

► A system of three-operation pin drafting that ties into a reducing operation with 120 doublings instead of 240 has given best results.

By FRANCOIS CLEYN
President, Spinners Ltd., and Consulting Editor, TEXTILE WORLD

IN OUR MILL we were sold on the merits of pin drafters right from the beginning, but we wondered about (1) how many machines we should have per set and (2) the best method of running pin-drafter sliver on into the Bradford reducers.

We decided to purchase four machines per set, and we operated the set as follows:

First Operation	Second Operation	Third Operation
1 machine	2 machines	1 machine
2 deliveries	2 deliveries each	4 deliveries

Obviously the number of machines required depended on the weight of the top to be processed, the layout, and the type of material to be used. We wanted to spin yarn ranging from 1/30s to 1/36s in 60/64s quality.

We started our operations with a standard layout:

	First Operation	Second Operation	Third Operation
Ends	4	5	5
Draft	7.8	8.2	8.2
Grains per 40 yd.	5920	3600	2200

We Change the Procedure

At this point, one box used for the second operation was taken out of the set. To maintain production, we had to revise our layout as follows:

	First Operation	Second Operation	Third Operation
Ends	5	6	4
Draft	8	7.9	8.1
Grains per 40 yd.	5900	4500	2200

The total number of doublings was able to be increased by purchasing a top weighing only 9,000 gr. per 40 yd.

On the reducing operation, we used a Prince-Smith 10/5 ring reducer. After trying various methods, we adopted the following as the most satisfactory arrangement:

1. The sliver is drawn from the cans by using an overhead creel, and is fed into the back rollers by passing through a condenser tube. The condenser tube enables us to feed the sliver directly into the nip of the bottom back roll and the intermediate back roll instead of following the conventional method of passing the sliver over the top back roll and around the intermediate back roll.

2. The sliver then passes through a single row of carriers and is kept in its condensed state by having a riding fork over the carriers, and then it enters the nip of the front rolls.

3. We found that best results were obtained by taking the bottom carrier roll out of gear and letting the top carrier roll turn by friction only. Despite the condensation of the sliver achieved by the condenser tube and the riding fork, we were still able to draft a sliver without twist.

4. This condition makes a very short ratch necessary. We found that proper ratching is extremely important on this operation. Often one-quarter of any inch, one way or the other, can make a big difference in the evenness of the sliver. We found that each lot had to be checked with an evenness tester before starting.

5. We also discovered that the weight of the top carrier roll is important and can substantially alter the evenness results. For good-length 60/64s tops, we found iron rollers weighing 1½ lb. to be satisfactory. For shorter and more brittle stock, wooden carriers gave better results.

After describing this operation in some detail, we have to admit that under the best of conditions it is still a crude method. It is at this point that fiber control is at its worst.

How Many Doublings?

This situation brought on our next problem: Was it better to adopt what we called Layout "A" with its 240 doublings, or Layout "B" with only 120 doublings?

We have come to the conclusion that it is more advantageous to sacrifice the additional doublings of Layout "A" and to run the reducing operation with a very low draft, as shown below in Layout "B".

LAYOUT A

	First Pin Drafter	Second Pin Drafter	Third Pin Drafter	Reducer	Rover
Ends	5	6	4	2	1
Draft	8	7.9	8.1	5.9	6.2
Grains per 40 yd.	5900	4500	2200	750	120

LAYOUT B

	First Pin Drafter	Second Pin Drafter	Third Pin Drafter	Reducer	Rover
Ends	5	6	4	1	1
Draft	8	7.9	8	3	6.2
Grains per 40 yd.	5900	4500	2250	750	120

Conclusions

The advantages of Layout "B" are obvious from the standpoint of economy and efficiency. An operator can look after more spindles, and there is a great saving in waste produced. If Layout "A" were selected by a mill, it would be advisable to have a stop motion on the reducer creel in an effort to duplicate the waste saving achieved in Layout "B".

To date in technical literature, not much stress has been laid on the waste saving that is now possible with pin drafters compared to conventional Bradford drawing. We think that this saving is still another important feature of pin drafting.

An Industry-wide Basis Should Be Adopted To Take Advantage of Pin-Drafter Savings

▶ Pin drafters are here to stay. So as worsted manufacturers we should ask ourselves several important questions.

1. If the place of the pin drafter is after the comb, why don't spinners order 50-gr. sliver instead of the conventional top?

One pin-drafter operation at the comber would be less expensive than the present two or three gillings, and would certainly be more useful to the spinner.

2. Wouldn't it be logical for top dyers to offer the same service to spinners?

To take full advantage of pin drafters, a long-draft reducing or roving operation has to follow pin drafting. For low counts it is a problem easily solved. If drafts of 15 to 16 can be obtained in this intermediary operation, there is no further need for long-draft spinning.

If, on the other hand, finer counts are to be produced, it is necessary to have an intermediate process that provides for drafts between 20 and 25. Or else it is necessary to have long draft on both drawing and spinning; or alternatively, sufficiently long draft in spinning to achieve the reduction.

3. Don't worsted manufacturers want to reduct costs?

It seems obvious that as a manufacturing group we want to progress and reduce costs. Any new development like this should be on an industry-wide basis. Every plant has to make savings, but it is even more important for worsted manufacturers to make an over-all saving as a group, in whatever stage of processing it is possible.

A CAMPAIGN AGAINST PRESS-OFFS should include attention to machine details—proper lubrication, adjustment of stop motions, etc. But sometimes press-offs are caused by the yarn itself, and so you ought to inspect yarn carefully.

Yarn Faults That Cause PRESS-OFFS

By E. DALTON WHITE, McGraw-Hill Atlanta Bureau

THERE ARE LOTS of causes of press-offs—some of them before knitting and some during knitting. Careful yarn inspection by knitters can help to trace the causes. Here are some of the yarn defects that may cause press-offs.

Slubs. Trash, large fly, and lint that settle on yarn in spinning or winding can cause slubs. Slub catchers can prevent a lot of this trouble if they're set close enough. In knitting, slubs catch in the yarn guides and cause the yarn to break, usually at the latch of the needle. The yarn then goes through the guides, and this action results in a complete press-off.

Roller-cut yarn. Bad roll coverings can cause this condition. Spinning frames should be checked carefully to insure that rolls are covered properly. This defective yarn usually breaks when it hits the latch of the knitting needle, and a press-off occurs.

Bad yarn winding. If ends are not properly tied, the knots will slip somewhere between the cone and the needles. A press-off is the price paid here if the knitting machines have mechanical stop motions.

Poor carding. Trash left in the yarn by poor carding causes stop motions to trip and sometimes means a press-off.

Excessive twist. Too much twist makes yarn kink and snarl, and even if you don't have press-off trouble you'll have a fabric with a harsh finish instead of a soft smooth hand.

Over-waxing. Guides and stop motions will gum up if the yarn has too much wax on it. The yarn will also jerk as it feeds from the cone.

Watch These Points in Handling X-51

Yarn and fiber is larger for any denier than the diameter of rayon or acetate.

Be sure any size or lubricant is compatible with the finish on the fiber.

Don't overdry yarn — it dries quickly, so keep temperatures low.

Use a fancy on the card.

Reduce twist in spinning because of bulk of fiber.

Watch density of sley and picks in weaving.

Temperatures are critical in scouring and dyeing.

Take it easy on your dyer in asking for dyeing blends. There's still a lot to be learned.

It's Not Hard to Spin, Weave, Knit, Dye X-51 ACRYLIC FIBER

► You may not have any X-51 to work with just now, but chances are you will. Read this information now to learn what the possibilities of using X-51 are, then keep it handy for when you get some X-51 to process.

By C. W. BENDIGO and A. L. PEIKER
New Products Development Dept., American Cyanamid Corp.

IT IS OUR BELIEF that the greatest future for all the acrylic staples is on cotton-type machinery. In this class of machinery we include spun-rayon and American-worsted as well as some systems that begin with tow.

We believe that the greatest potential for acrylic fibers is on cotton-type equipment principally because the acrylics permit cotton and spun-rayon mills to produce warmth-type fabrics superior to any that they have been able to achieve heretofore.

Based on papers recently delivered before the American Association of Textile Technologists.

X-51 is the trade mark of American Cyanamid Corp. for its acrylic fiber in filament and staple forms.

Watch Your Yarn Diameter In Handling Filament

X-51 acrylic filament yarn has been thrown and woven or knit on conventional equipment by the same procedures used with any other continuous-filament synthetics. The weaver and knitter should especially bear in mind, however, that X-51 yarns have a larger diameter for any denier than is found in rayon or acetate. The three X-51 yarns so far produced, 150/90, 100/60, and 75/45, have—for acrylics—a high number of filaments. The finer filaments are responsible for much of the pleasant feel of fabrics woven or knit from X-51. This feel should make X-51 filament desirable for many types of undergarments. Despite the higher number of filaments, brushed fabrics have a surprisingly resilient surface, thanks to the physical properties of X-51 acrylic fiber.

Filament yarn knits well, with good stretch formation, on both warp-knitting and filling-knitting machines if the needles are not overcrowded.

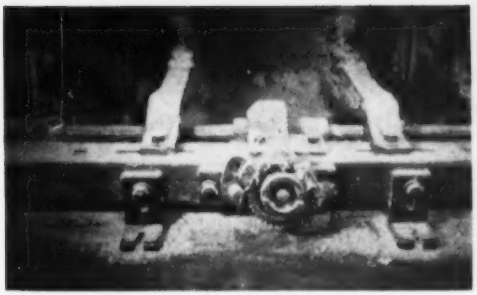
One caution necessary with X-51 filament weaving yarns is to be sure that when warps are sized, the size is compatible with the anti-static finish on the yarn. In slashing, caution should also be taken so as not to overdry warps. Bear in mind that the fiber drys very quickly. Cylinder temperatures should be kept low.

Staple Processes With Little Machine Modification

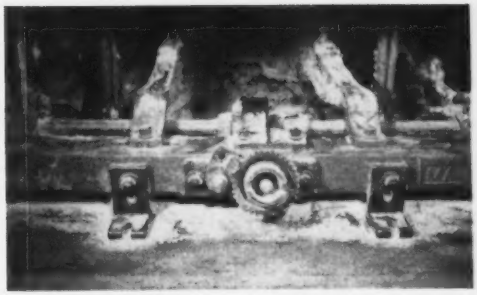
X-51 staple has been processed on cotton, woolen, and worsted equipment with a minimum of modifications and difficulties. Mills that have also handled other synthetics, especially hydrophobic types, have reported that X-51 processes more easily than any other synthetics.

Much of the information on run-

(*Continued on page 195*)



BEFORE SUCTION CLEANING, you can see a normal accumulation of fly and dirt under the loom. Notice the thread waste on the cloth-release gear.



AFTER THE CLEANING, most of the dirt is gone. You can see the marks made by the suction nozzle as it scraped around. Even the thread waste has disappeared.

☆ *Complete on this page —*

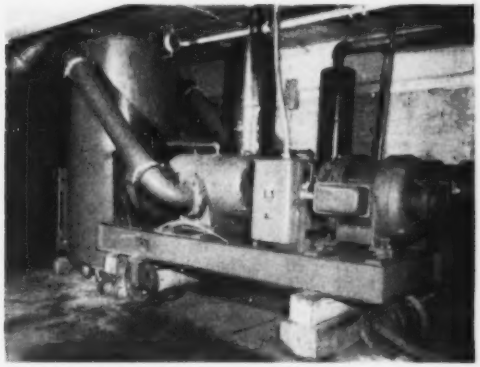
King-Size Suction System CLEANS LOOMS

By JAMES H. KENNEDY
Southern Editor, TEXTILE WORLD

AVONDALE MILLS, Sylacauga, Ala., is experimenting with a super-suction loom-cleaning system made by New England Machine Works, Waterbury, Conn. The new system is being used in conjunction with other cleaning methods, and Avondale feels that quality may be improved because dirt is not blown around to land on adjacent looms.

DOWN CELLAR is this chamber that collects the dirt and lint. Avondale thinks it is easier to clean looms by emptying dirt in the basement than by sweeping it around upstairs.

OUTLETS FOR THE SUCTION NOZZLE are conveniently located all over the weave room. Air, brushes, and water are still used to clean looms; but the suction gets a lot of the dirt. Metal hose is about 25 ft. long and enables several looms to be cleaned from each outlet.



HEART OF THE SYSTEM is this unit in the basement. Collection tank is at the left. A second unit is just behind the one you see here, and both can draw 29 in. of mercury, if that suction is required. Avondale usually runs just one at a time.

Here's a Graph You Can Use To Evaluate SPINNING TESTS

HIGHLIGHTS: You can get the answers to a lot of questions without resorting to a lot of messy calculations—if you have your standards department make you a graph to fit your spinning requirements. Some of the questions that the graph will answer are:

- **When should you worry about ends down?**
- **Is the test sample really different from the regular stock?**
- **How many spindle hours are needed for a test to mean anything?**

CHARTS THAT GIVE YOU the benefit of statistics without messy calculations are useful in analyzing data on end breakage in spinning. Here are a few examples that illustrate how the graphs can be used.

To Evaluate a Mechanical Change

Suppose you've altered tpi., front-roll speed, humidity, or the like, and want to know if the change has really altered ends down. You run a test on two frames and come up with the following results:

Frame A—40 ends down per 1,000 sp.hr.
Frame B—45.8 ends down per 1,000 sp.hr.
Duration of test—12,000 sp.hr.

To determine if the tests represent a significant change:

1. Locate the vertical line on the graph that represents 12,000 sp.hr. of running time.

2. Locate the sloping line that represents 40 ends down per 1,000 sp.hr.

3. Find the point where the two lines located above intersect, and read the level of this intersection at the left-hand margin. The approximate value in this case is ±5.4.

Interpretation: The true average rate of end breaks on Frame A is probably within the range of 40 ± 5.4, or between 34.6 and 45.4. This tolerance must be allowed for chance variation.

Now apply steps 1, 2, and 3 to the data from Frame B. Because there is not a sloping line for 45.8 ends down per 1,000 spindle hours, the approximate location must be visualized and the level of the intersection interpolated. The approximate level of the intersection is ±5.6. This is the tolerance that must be allowed for chance variation in the data on Frame B. The true average rate of end breakage on Frame B is, therefore, probably between 45.8 ± 5.6, or from 40.2 to 51.4.

Conclusion: Tolerances that were allowed for Frames A and B overlap; therefore it cannot be certain from these data if the observed difference is real or due to chance alone. The difference cannot be judged significant. Additional testing may change your judgment. The odds that we are correct in this judgment are 997 to 3, or about 332 to 1.

To Compare Two Samples

You have two samples to evaluate—two new mixes that you want to compare. You've been watching and testing the two frames that are running the samples, and you want to know how long you've got to run the tests before you have a reliable appraisal of the two samples. You've decided that a difference of five ends down per 1,000 sp.hr. will be enough.

Results so far are:

Sample A—36 ends down per 1,000 sp.hr.
Sample B—44 ends down per 1,000 sp.hr.
Duration of test—5,000 sp.hr.

1. Determine the average breaking rate for the two samples: (36 + 44) ÷ 2 = 40. Locate the sloping line of this value.

2. Locate the horizontal line for ±4, the observed difference in spinning performance.

3. Find the point where the above two lines intersect, and read the spindle hours on the bottom scale. The value in this case is about 22,000 sp.hr.

Interpretation: If the average of end breaks for Sample A is eight or more units different from the average for Sample B at the end of a 22,000-hr. test, the samples are truly different. But any conclusion based on less than 22,000 sp.hr. will not be sound.

If, however, the difference in averages is less than eight, the test should be continued.

To Set Quality Control Limits

You've got to allow for some variation from day to day, but how much? Suppose your average rate of end breakage is 40 per 1,000 sp.hr. and that you'll tolerate a variation of ±5 from run-of-the-mill causes. Your standard test is 10,000 sp.hr. What should be your quality-control limits?

1. Find the tolerance for a 10,000-sp.hr. test at the rate of 45 breaks per 1,000 sp.hr. The value is ±6.2; so your upper limit is 45 + 6.2 = 51.2.

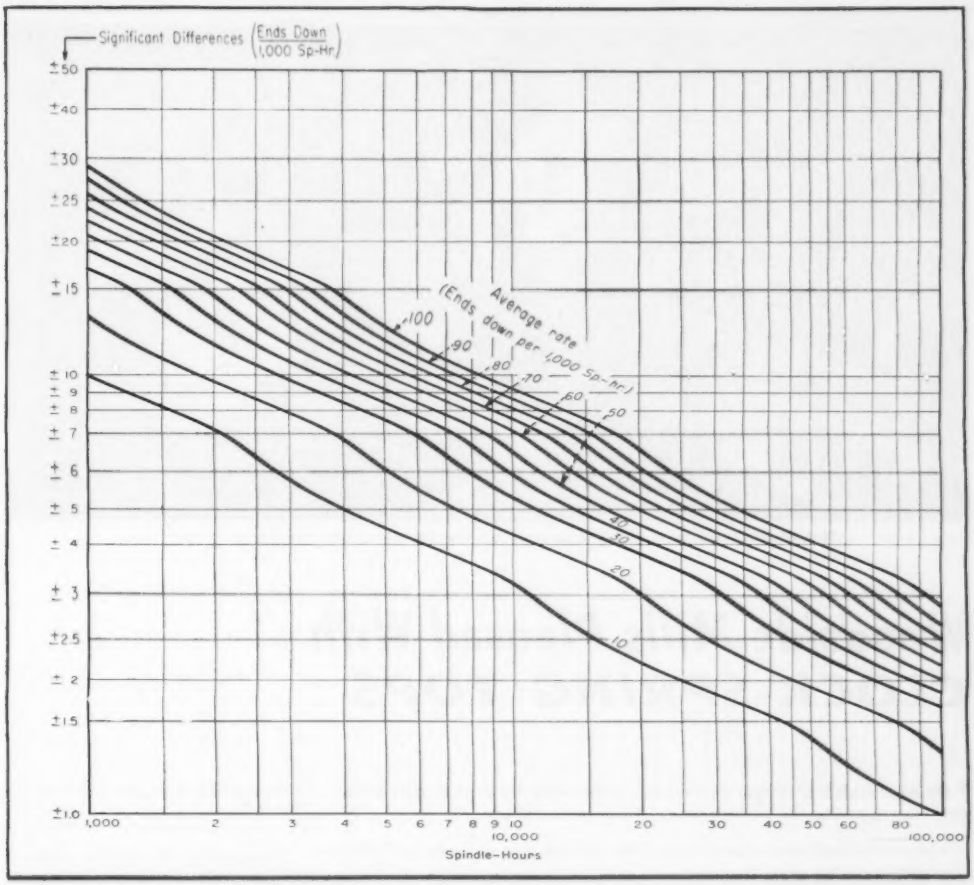
2. Find the tolerance for your lower limit, 35 breaks. The value is ±5.6, and your lower limit is 29.4.

Interpretation: To be within your average limits of 40 ±5 breaks per 1,000 sp.hr., you shouldn't worry unless tests fall outside of the range of 29.4 to 51.2, on a 10,000-sp.hr. test.

To Determine Hour-to-Hour Variation

In figuring workloads for spinners, you want to know how much chance variation can be expected in end breakage from hour to hour. The average ends-down rate is 40 and the spinner's job is 1,000 spindles.

The graph shows a chance tolerance of ±19 end breaks for 1,000 sp.hr. (The rate and number 40 are identical in this particular situation.) Chance variation from hour to hour, then, might be from 21 to 59 breaks.



THIS CHART (FIG. 1) SHOWS HOW MUCH VARIATION you can expect in end-breakage tests when you know the average of test results and the number of spindle hours tested.

The Theory—For Standards Departments Only

This graph is based on the "fractional defective" theory, as set forth in handbooks prepared and recommended by A.S.T.M. and A.S.Q.C. The statistical control limits for rate of defective parts is presented as an equation:

$$\text{Control Limits} = p \pm 3\sqrt{\frac{p(1-p)}{n}}$$

p = average rate
n = number of part examined

There are two variables in the equation. Translated to end-breakage data, p is the average breaks per 1,000 spindle hours expressed as a decimal fraction. For instance, 30 per 1,000 spindle hours is 0.030. Spindle hours per test is substituted for "n." When n = 10,000 and p = 0.030, the equation becomes:

$$\text{Control limits} = 0.030 \pm 3\sqrt{\frac{0.030(1.00 - 0.03)}{10,000}}$$

$$\text{Control limits} = 0.030 \pm 3\sqrt{0.0000291}$$

$$\text{Control limits} = 0.030 \pm 0.0051$$

$$\text{Control limits} = 30.0 \pm 5.1$$

Next question: Is the equation applicable to end-breakage data?

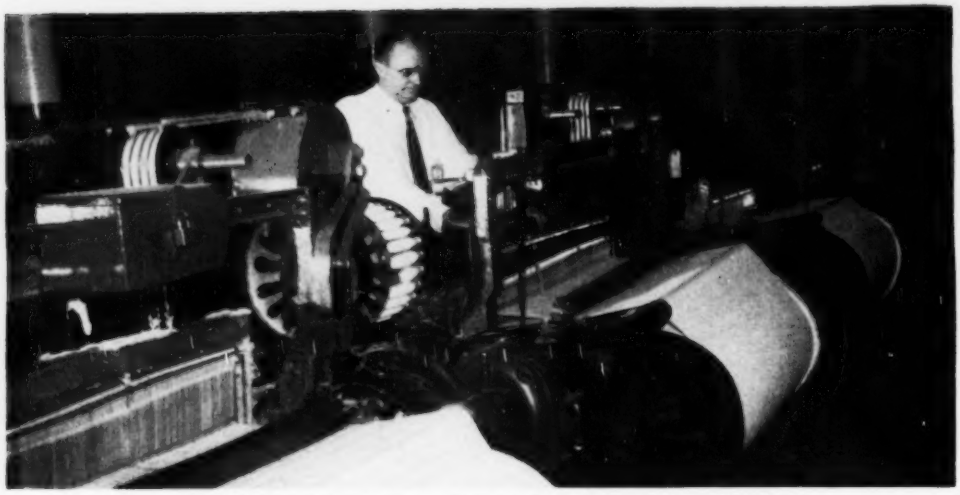
The A.S.T.M. manual states that the equation "can be used quite generally, and 'p' may, in fact, be used to represent the ratio of the number of items, occurrences, etc., that possess some given attribute to the total number of items under consideration." For our purpose the item, or sample, is the amount of yarn produced per spindle hour. If it possesses the attribute of a broken end, that item, or unit, is defective.

Most probability equations are concerned with matters of chance. Do ends break in this manner?

There is good evidence that end breakages at spinning are the results of multiple-cause factors. Several factors may contribute to end breakage, but usually no single factor can be unquestionably assigned as the independent or only cause for a particular break.

Thick and thin places occur throughout the length of the roving. Random arrangement of fibers does cause a greater concentration of fiber ends at some points than at others. Yarn tension fluctuates because of many variables—some may be periodic with both short- and long-length cycles, or some may be irregular and unpredictable. There may be eccentricities in the rolls or defects in the coverings. Without attempting to enumerate these factors,

(Continued on page 252)



THIS WEAVE ROOM has clock-spring tops on all its looms. The old harness motion was the roll-top type.

Woodside Mills Pleased With CLOCK-SPRING TOPS

► **On most models of Draper cam looms, clock-spring top motions give better weaving versatility and performance. Advantages include:**

- **More styles of cloth can be woven than on roll tops since up to six harnesses can be used**
- **Fewer warp ends are broken**
- **Shed opening is clean**
- **Little attention is required for harness resetting**
- **Treadle roll follows cam evenly through full cycle with less tension**
- **Adjustments of tensions and harness strapping are simple**

By RICHARD B. PRESSLEY, Assistant Editor, TEXTILE WORLD

WOODSIDE MILLS, Greenville, S. C., has recently completed an installation of 580 clock-spring top units on K-Model looms and 2,020 units on E-Model looms for a total of 2,600 units.

The old harness motion was the roll top in which two sets of double harnesses were operated from cams.

Woodside has replaced the old motion completely, including the cams, treadles, harnesses, and top-motion parts.

What is the Clock-Spring Top?

The clock-spring top harness motion has been in use for several years. It has proved to be a good all-purpose harness motion. The spring in the clock-spring top is designed like the mainspring of a clock or watch.

When we analyze the roll and shaft, the sheave and roll, Dwight spring, Brown spring, and clock-spring top, to make a comparison, we find:

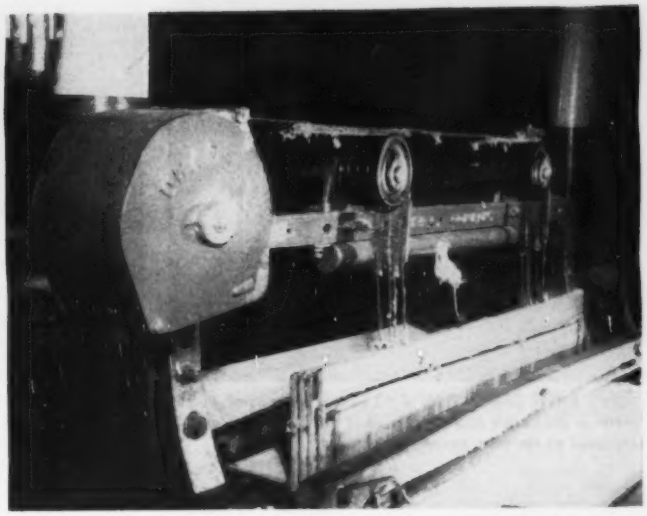
The roll-and-shaft-and-sheave and roll-top motions are simple, positive harness motions that give little trouble. Their use is limited to two-shade weaves, and the ups must always equal the downs.

These positive roll tops are adequate for the requirements of looms on plain weaves and essential for looms that run heavy, plain, cotton fabrics.

The Dwight spring-harness motion has a capacity of up to six harnesses. Repair-strapping costs are higher due to the fact that as the compensating sheave wears, it gets out of line; and the pin in the compensating sheave cuts the strap in two. The strapping also wears faster at the harness sheaves and at the connecting hooks because of the greater pressure required. Springs are in a horizontal position and collect and drop lint onto the warp. When a spring breaks, the harness is apt to cause expensive warp smashes. It is difficult to vary spring tensions that occasionally result in uneven sheds.

The Brown spring-harness motion is an improvement over the Dwight spring in that the springs are positioned vertically, and lint complaints are eliminated. There is a strap to hold up the harness when a spring breaks. Otherwise strapping and wire conditions are about the same.

THE STAND for the clock unit is bolted to the upright portion of the loom arch.



HARNESS-SHEAVE STANDS must be bolted to the arch of an E-model loom when a clock-spring top is added.

What Are The Advantages Of Clock-Spring Tops?

1. The tension of the spring is always correct no matter what the position of the harnesses is. Since the tension on each spring is adjustable, no undue strain is placed on the strapping. Treadle and rolls and the cams last longer since wear is decreased.

Most of the clock-spring motion is enclosed, and as a result, greasy lint is not thrown onto the cloth or harnesses.

The springs sometimes break, but the percentage of breakage is negligible. One mill reported that only four springs broke on 1,000 looms the first year after the motions were installed.

Woodside Likes Them

Following a period of operation of the clock-spring top motion, these specific advantages have been found:

1. More styles of cloth may be woven on their looms, since six harnesses are now available for various fabric constructions.

2. Although the same styles that were woven on the roll top are now being woven on the clock-spring top, the looms have fewer ends down. Each harness heddle is fastened to a single harness shaft, and as a result the heddle is flexible enough to permit large knots to pass through the heddle without breaking warp ends.

3. The smooth harness action reduces the number of warp-end breaks. It is also apparent that more even cloth is woven because of the smooth harness action.

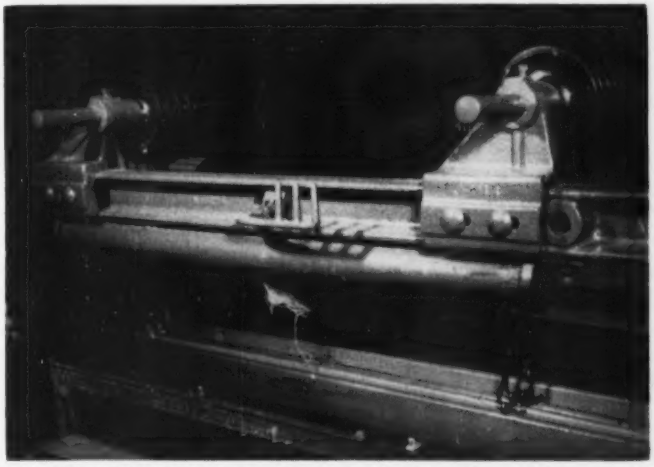
4. Harness-strapping breakage has been reduced by a large percentage. There is less strain on the strapping, and consequently there is less stretch in the strapping. There is also less wear on treadles, rolls, and cams.

It is not necessary to reset the harnesses as often as on the old top motion.

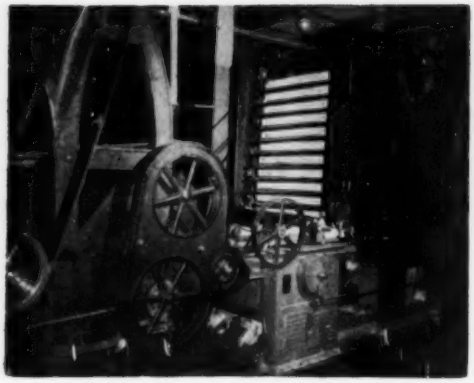
5. The constant even tension of the springs reduces the effort required to pull the lay back by turning the handwheel, and the weaver's work is made easier.

The light spring load means that less power is consumed by the motor in driving the loom.

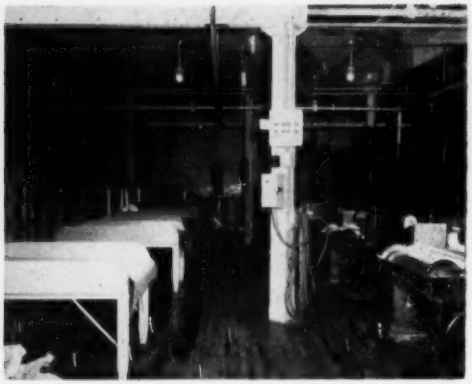
Since the clock-spring top eliminates a lot of the defects that have been troublesome on all other harness motions, it improves the performance of cam looms.



THE CLOCK-SPRING TOP is complete. The top of the housing may be opened by pressing the latch.



HERE'S WHERE ONE SECTION of the pickers was removed. Buckley beater on the breaker section was replaced with a Kirschner, and the fan speed on the front section was increased.



WRAPPING TABLES were set up in front of the pickers. Each lap is weighed, checked for the ½-lb. tolerance, and then wrapped in brown paper before being put on the truck.

How Dixie Mills Handles SPUN

► Some of the nicest spun-synthetic fabrics on the market today are coming from Dixie Mills, Inc., La Grange, Ga. Dixie, a subsidiary of West Point Mfg. Co., used to be a cotton mill but now is entirely on synthetic fibers. Here's how they changed their equipment—from picking to spinning.

By JAMES H. KENNEDY
Southern Editor, TEXTILE WORLD

Pickers Lost a Beater Section

The single-process pickers at Dixie lost their middle beater section when the mill went on synthetics because the man-made fibers don't require so much treatment as cotton. Dixie uses practically all types of synthetic fibers, usually 1½-in. in 1.5- or 3-den. size.

On the breaker section, the Buckley beater was replaced with a 20-in. Kirschner beater. Beater speed of the breaker section remained at 1,020 rpm., and the fan speed of 1,265 rpm. was not changed either. A larger sprocket was put on the hopper feeder to lighten the feed.

The front beater, a 16-in. Kirschner, was kept at 1,335 rpm., but the fan speed here was raised from 1,345 to 1,650 rpm. This increase in speed was necessary because the staple fibers, longer and for the most part heavier than cotton, need the extra "push" to put them on the screen properly.

Pressure on the lifting rack was decreased about one-third.

Dixie makes a 49-yd. lap that runs about 14.75 oz. per yd. A ½-lb. tolerance is allowed.

Cleanliness—a byword at this mill—is insured for the picker laps by wrapping them with heavy brown paper. The paper also protects the laps from damage. Special tables were built at the front of each picker to make wrapping an easy operation.

Cards Have Gentler Action

"There's no dirt to be taken out of staple fiber—granted—but parallelization of fibers is even more important than with cotton," says J. T. Bowles, card-room overseer.

Lickerins were slowed from 450 to 280 rpm. And some of the settings were changed, as follows:

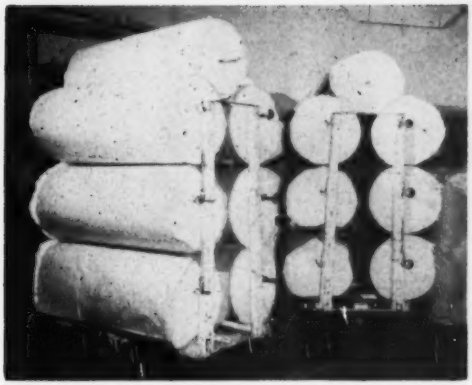
Feed plate to lickerin	—from	0.010 to 0.017 in.
Flats to cylinder	—from	0.010 to 0.012 in.
Percentage plate	—from	0.029 to 0.022 in.

The rest of the settings are the same as those outlined in the 22-point carding survey, TEXTILE WORLD, March, 1952, p. 153.

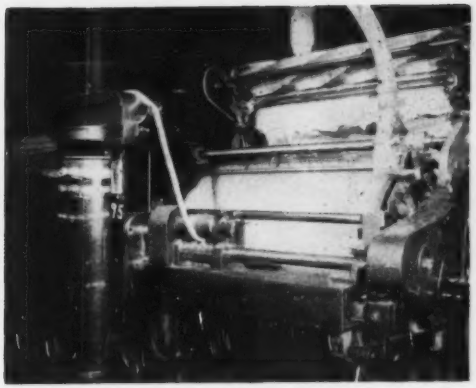
But It's More Than Machine Settings—

"When you write this story, Mr. Kennedy, be sure to give credit where it is due," said B. W. Whorton, vice-president in charge of Dixie Mills. "Without the cooperation of our people here, the conversion from cotton to synthetics could never have been made. They're the ones who are responsible for the way this mill runs—not the machines, not the management. I want you to know that we've got the finest workers anywhere right here at our plant."

[TW Comment: If more mill men felt this way, friction and unrest would be unknown. But this sort of thinking is not unusual in West Point's family—or in several of the other leaders in industrial relations in this area. We hope that Mr. Whorton's words will not be taken lightly.]



WISH WE HAD TECHNICOLOR to show you how pretty these laps look all wrapped up and tinted. Tints are applied in opening and are most necessary in a spun-synthetic mill.



CARDS PRODUCE 11½ lb. per hr. on the average. Several settings had to be changed to run synthetics. Dirt removal is no problem, but parallelization is very important.

SYNTHETICS

Card production varies from about 9 lb. per hr. for a 100% 1½-den. lot, to 14 lb. per hr. for a 3-den. lot. Neps form in synthetics too, and the finer fibers require slower carding. An average 50-50 blend is carded at 11.5 lb. per hr. at 100% efficiency.

Waste is about the same for the synthetic fibers as it was for cotton, with more on some blends than on others. Coarser deniers present a more difficult fly condition, but there's no fly to speak of. Ceilings are blown down once a year!

Cards are wiped off every 24 hr., but the air hose is never used while the cards are running. Dixie's quality standards don't stand for loose fly.

There are 112 cards in Dixie's card room, and eight of them are ground every 24 hr. Two are set completely in the same period. All of the grinding and setting is done by two men—one on each of two shifts. Two other men on the same two shifts do the oiling and fixing.

Vacuum stripping is done twice every 8 hr. If there's much nylon in the blend, stripping is done three times a shift.

Dixie's sliver comes off the cards at 60 gr. Temperature of the room is kept about 85° F., and the relative humidity is 58%.

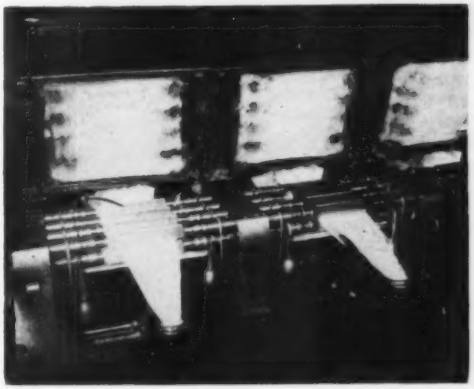
Drawing Has New Roll Settings

The Saco-Lowell drawing frames that Dixie has have been equipped with Medley rolls and stands, and a 1¼-in. front roll. Roll settings are graduated in sixteenths of an inch instead of the ⅛-in. graduations in cotton. Settings start at 1⅛ in. for the front to second roll, and that makes the rear setting 1⅛ in. on the four-roll frames. All rolls are metallic, fluted.

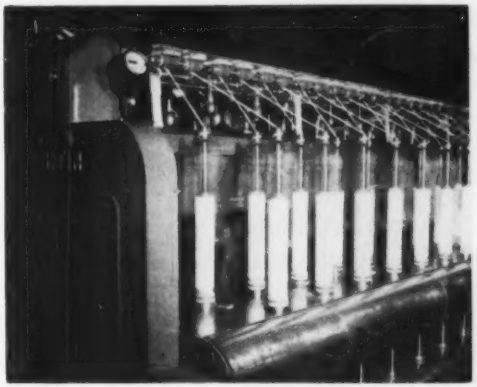
Dixie has two processes of drawing—breaker and finisher. Both are fed six ends and deliver a 61-gr. sliver at 120 ft. per min.

Creeling is done differently for synthetics—it's the block

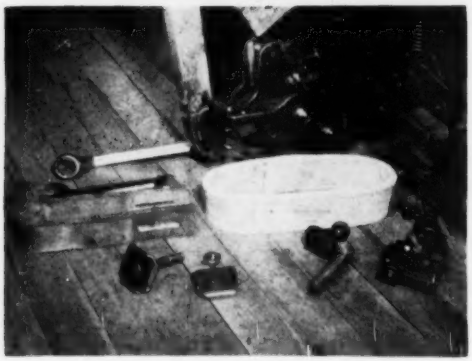
(*Continued on page 240*)



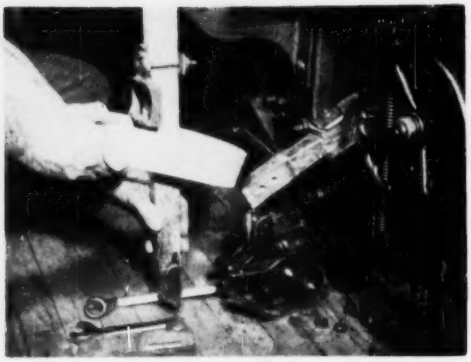
METALLIC ROLLS are used throughout in the two processes of drawing at Dixie. Roll settings were changed, and the block method of creeling is now used.



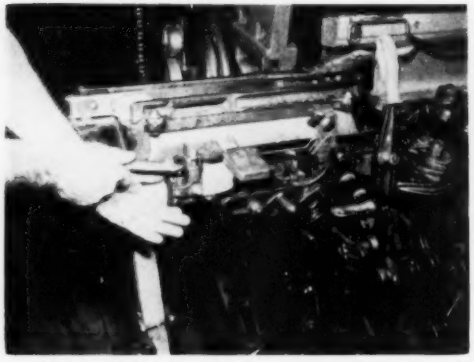
FLYERS RUN MORE SLOWLY on slubbers to keep front-roll speed low with the low twist multipliers used. Frames are cleaned frequently on a rigid schedule.



HERE'S THE LEVER END of an X-D Draper loom with the necessary parts removed to apply an endless checkstrap. The back and front friction fingers, the long lug, and the picker-stick bolt are removed.



THE NEW STRAP is placed on the picker stick from the bottom, slipped over the power strap, and placed over the friction-finger brackets.



THE FRONT FRICTION FINGER is set so that the desired tension will be on the checkstrap. The finger is tightened at the bracket. Later the screw stud will be used to reset the tension.

THE BACK FRICTION FINGER is set so that the checkstrap tension will be the same on the back and front of the checkstrap. The front finger may have to be readjusted.

At Marion Mfg. Co.—

ENDLESS CHECKSTRAPS

► Marion keeps whittling at checkstrap costs. A few years ago, the checkstrap life was 8 mo.; now it's almost double. You can use endless straps on your loom —

- . . . If you run X-D or X-2 looms at high speeds
- . . . If your weave-room atmospheric condition remains constant
- . . . If you train your loomfixers in new shuttle-checking methods

By **S. B. FINLEY,** Marion Mfg. Co.

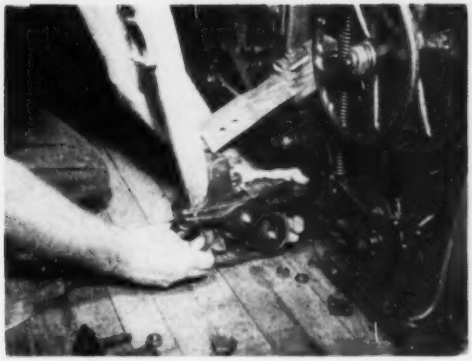
WE HAVE BEEN RUNNING endless checkstraps here at Marion for more than 10 yr. Endless straps do a better job for us than slotted straps—and they last longer.

After we began running endless straps, we had a lot of trouble keeping our shuttles boxed, and the loomfixers did not like them. Throughout the years, we've been constantly improving our methods in the use of endless straps until shuttle boxing has become a small problem with us.

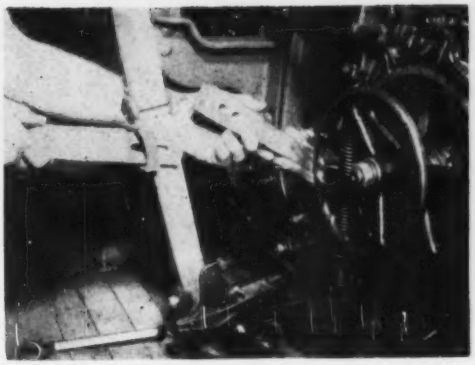
Here's How We Do It

We have a good instructor who trains the other loomfixers in the correct way to put on endless straps, set the shuttle boxes, and set the straps to box the shutter. One instructor contacts all three shifts—and all the loomfixers box the shuttles alike.

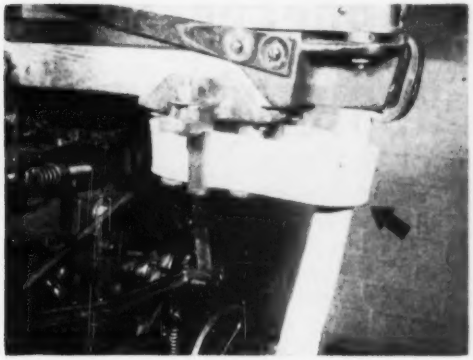
We turn our checkstraps around once every month to



THE HEEL STRAP and picker-stick bolt are replaced after the checkstrap is put on the brackets. The bolt must be sure to be tightened securely.



THE LONG LUG is replaced and set as near as possible in the indentation made by the washers. After the checkstrap is set, the stroke will be reset and the lug bolt retightened.



A ½-IN. SPACE is left between the back of the picker stick and the inside of the checkstrap when an endless checkstrap is of the correct length.

LOW CHECKSTRAP COSTS are pointed out on a graph to T. D. Ross, overseer of weaving, by James D. Wyatt, superintendent of weaving.

Last 13.4 Months

increase the life of the straps. During the first work week of each month, each loomfixer turns the straps on one-third of his section. It takes us five days to turn all of the straps because the straps often have to be adjusted after they are turned. The straps are slipped to a new position by hand, and no tools are used unless a strap has to be adjusted.

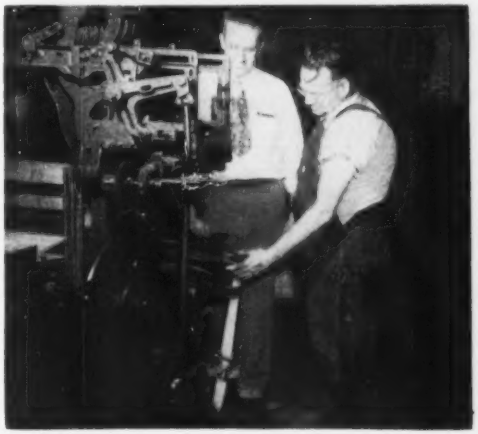
Our endless straps last an average of 13.4 mo.

The checkstrap cost is $0.38 per loom month. These figures are taken from a total of 764 X-D and X-2 looms. The loom speed of the X-D loom is 172 ppm. The X-2 speed is 178.5 ppm.

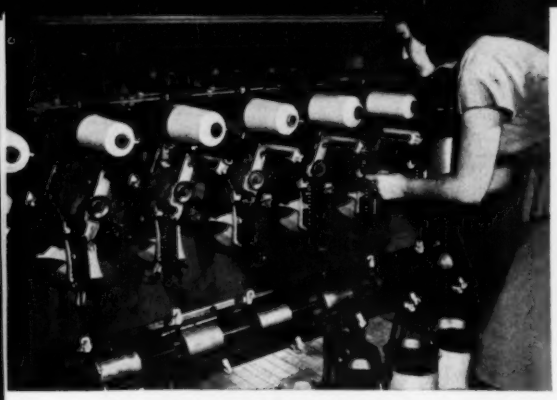
Here's How You Can Do It

Endless checkstraps can be applied to all X-D and X-2 Draper looms.

(*Continued on page 212*)



"THIS SHUTTLE IS CERTAINLY CHECKING," says T. D. Ross, overseer of weaving, to Sam Finley, loomfixer, as they inspect a loom in the weave room.



COMPARATIVE CONING OIL TESTS were run by this throwster in an effort to improve quality. Sunoco Fibrlub L-220 gave the finest results. It lubricated better, reducing breakage. Because it does not change in viscosity or composition, Fibrlub L-220 eliminated preferential pick-up. Along with economies in production, it brought substantial savings in process oil costs.

DELAYS ELIMINATED. A well-known knitter had trouble with an expensive trough oil. It would not form stable emulsions and it frequently caused unlevel dyeing, because it would not scour out thoroughly. Changing to Sunotex TS-48 proved the answer to both problems. In addition, Sunotex TS-48 helps him get cleaner, rounder, more uniform stitches.

MILLS FIND 3 SUN PROCESS AIDS MEET ALL NYLON HOSIERY NEEDS

Through the years, working in close collaboration with the technical staffs of nylon throwsters and knitters, Sun Oil Company research groups have developed three process aids which meet all fiber lubrication requirements of the full-fashioned hosiery industry. Each serves a particular purpose: Sunoco Fibrlub L-220 is a coning oil for throwsters; Sunotex TS-48 a trough oil for knitters of 30-and-higher-denier hose; Sunoco Fibrlub 45 a special wick oil for knitters of 15 and 20-denier hose.

That there are real advantages in using these "Job-Proved" process aids is obvious from their extensive use in plants throughout the East, the South and Canada. For information about how they can help you produce better nylons faster, and more profitably, fill in the coupon below.

SUN OIL COMPANY, Dept. TW-5, Philadelphia 3, Pa.

We would like to consult a Sun representative in reference to ☐ coning oil, ☐ trough oil, ☐ wick oil.

Name_____

Title_____

Company_____

Street_____

City_____ Zone____ State_____

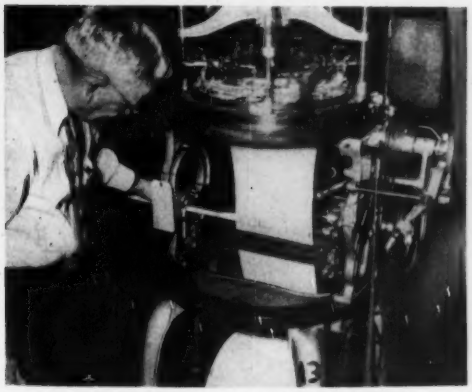
A COMPLETE LINE OF PROCESS AIDS. In addition to nylon-process aids, Sun Oil Company produces textile-process aids for use with wool, synthetics, blends of wool and synthetics, cotton and cordage. Sun's technical staff, backed by Sun's extensive research facilities, is at your service for consultation on any processing problem you may have.

WEAR HAS BEEN NEGLIGIBLE on needles and carrier tubes ever since a prominent knitter of 15 and 20-denier hose adopted Fibrlub 45 as his wick oil. He says that this product, though less costly, is superior in thread lubricating qualities to most of the oils he used before. It feeds readily through the wick and is delivered in sufficient quantity to the thread.

SUN INDUSTRIAL PRODUCTS

SUN OIL COMPANY, PHILADELPHIA 3, PA. • SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

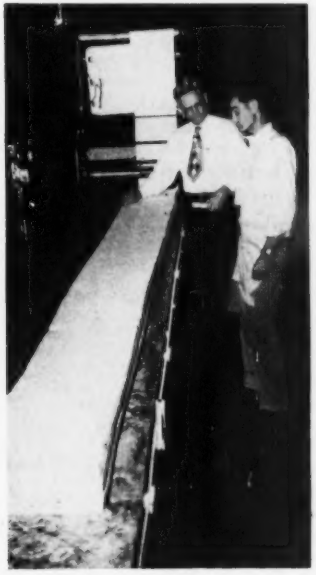
SUNOCO®



THE FIRST MEASUREMENT is made right at the knitting machine. This first step in quality control is taken after calculations are made to indicate what the proper width should be. W. U. Collier, superintendent at American Mills, does the job here.

AFTER BLEACHING AND DRYING, the fabric is run through the calender to get correct width. Each roll must meet requirements so that there will be no distortion caused by an oversized spreader. Under normal conditions, width shrinkage in processing is about 20%.

Watch Tubular-Fabric Width To Prevent STITCH DISTORTION



NOTICE HOW FLAT THIS FABRIC is on the cutting table. Cutting fabric like this is easy. Use of the proper yarn count, machine size, and correct size of spreader at the calender insures against curled edges on the cutting table.

▶ At American Mills, Griffin, Ga., a well-planned program is keeping stitch distortion cut to the bone. Emphasis is on proper machine size, careful control of tensions, and use of the proper size of spreader in calendering.

By E. DALTON WHITE
McGraw-Hill Atlanta Bureau

KNITTERS KNOW THAT if you distort the stitch of a tubular-knitted fabric the stitch will return to its normal position after laundering. Distortion means excessive shrinkage, and a freshly laundered garment will be several sizes smaller if you don't watch out.

That's why a lot of care is being taken to prevent any distortion, or at least to minimize it by systems of quality control in every knitting and finishing operation. American Mills, Griffin, Ga., keeps a keen eye to prevent and control both stitch distortion and undue tension.

IN THE FINAL SEWING OPERATION, stitches don't punch holes if there's enough natural elasticity left in the fabric. The quality-control program must include sewing because some defects don't show up until needles start punching holes.

Teamwork

It takes teamwork to make sweet music — whether it's a barbershop quartet oiled for harmony, or the satisfying sound of smooth operation in industry.

What can we do to help insure the future of your business? That's what Butterworth engineers have been asking for 131 years — the question has special meaning today.

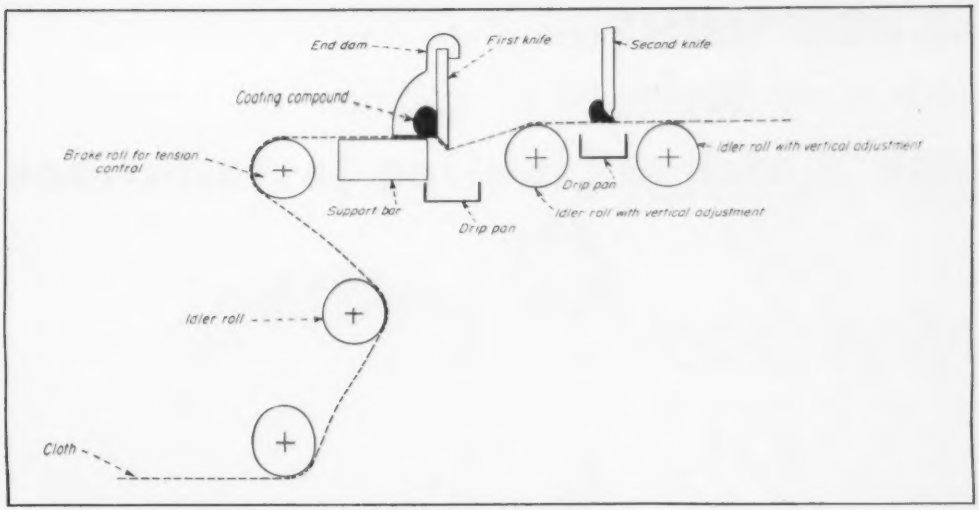
Thinking of new machines? We will do the utmost to meet your requirements, within the limits of our metal allotments. Making long range plans? Our engineers are at your service. Even now they are teamed with many of America's leading mills, thinking of the years ahead and planning with them to maintain their competitive position.

Butterworth service is offered too, to help your wet finishing department get the most out of what you now have — to keep equipment at peak efficiency. It may be only a spare part you need — but if you need it in a hurry, you'll get it in a hurry if it is humanly possible.

A letter, a wire or a phone call will put a Butterworth engineer on your team.

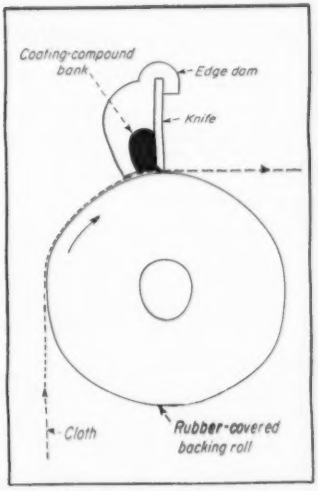
H. W. BUTTERWORTH & SONS COMPANY
Bethayres, Pennsylvania
1211 Johnston Bldg., Charlotte, N.C. • 187 Westminster St., Providence, R.I.
Machines for Bleaching, Boiling-Out, Mercerizing, Dyeing, Finishing and Embossing : : Pot Spinning Machines for Synthetic Fibers
Calender Rolls : : Tenter Chains

BUTTERWORTH



IRREGULARITIES in the surface of the applied coating, from lint or coarse undispersed particles in the coating compound, can be evened out in this double-knife coater layout by the second knife located between two adjustable idler heads.

Varied Equipment Used in Applying FILM-FORMING *Solutions*



KNIFE-OVER-ROLL COATING HEAD is ideally suited for the coating of heavy-weight and closely woven fabrics. The amount of coating applied can be uniformly controlled.

▶ **Coating heads (roll coaters, spray coaters, brush coaters, and air knives) are discussed as special pieces of equipment for mills to know about if they wish to get into coated-fabric finishing.**

By THOMAS J. KERR, Coated-Fabrics Consultant

METHODS OF COATING FABRICS can be divided into two general classifications.

One classification consists of those methods of coating that are suitable for the application of film-forming materials from solution or dispersion, wherein it is necessary to evaporate solvents or the dispersion medium, or fuse the applied compound into a continuous film, or do both in combination. The other classification comprises those methods whereby thermoplastic materials are softened by heat or pressure, or both, and formed into a film that is laid on the surface of the cloth.

These second methods will be discussed at another time.

Let us consider now the equipment used in the first type of coating. This equipment usually consists of three integral units: the coating head, the drying or fusing apparatus, and the wind-up.

A suitable method of handling the cloth at the head-end, which will bring it to the coating mechanism smoothly and uniformly, is also an essential, but is usually considered a part of the coating head. However, in some continuous-process installations, such equipment is elaborate enough to be considered as a separate fourth unit.

Coating Heads

Many different types of coating heads have been conceived for the application of coatings to fabric and

with **BENJAMIN'S** complete line
there is no trouble *at all* getting

Task Matched Lighting Installations

In the 400-page Benjamin Catalog, you'll find just the lighting equipment you need to provide lighting that is matched to the task.

No need wasting time trying to locate a source for this or that special unit . . . or figuring out an acceptable substitute. If the unit is needed in industrial and utilitarian lighting . . . you'll be sure to find it in the Benjamin Line!

You'll be sure to find that, not only is the unit you select correct in lighting design, but equally important, it is designed for extra long life operation under the special operating conditions for which it is intended. Whether it be for ordinary industrial use, installation in corrosive, dusty or explosive atmospheres, for indoor lighting or outdoor . . . the Benjamin Unit designed for the task can be depended upon to meet highest expectations for finest performance.—Benjamin Electric Mfg. Co., Dept. EE, DesPlaines, Ill.

"MAGNA-FLO" SYSTEMS
Provide Over 300 Combinations for Matched to the Task Lighting.

Like all Benjamin Lighting Systems, the "Magna-Flo" line for use with the three T12 Slimline Lamps is complete! It is so complete because, basically, just three channel sizes and four types of reflectors form the backbone of almost unlimited systems to match any industrial lighting task.

R5030

"VAPOLETS"

For locations with atmospheres containing moisture, non-hazardous dusts or vapors.

Available in three types of reflectors—Dome, Shallow Dome and Symmetrical Angle. These reflectors thread on to the vapolet housing by cast-iron ring. Choice of glass globes: plain, opal, heat-resisting, ruby, etc.

EXPLOSION-PROOF

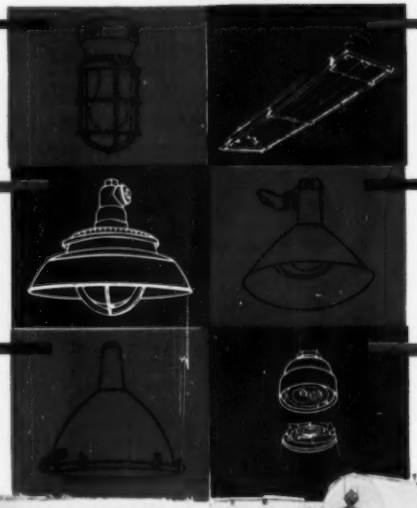
For locations listed by U. L. as Class I, Group C and D hazardous locations.

For lighting locations involving explosive atmospheres or explosive inflammable dusts, there is a complete line of Benjamin Explosion-Proof Units, available in a choice of reflectors, Dome, Flat Cone, Bowl, Symmetrical Angle; also choice of mountings.

"STEELITES"

For locations where keeping lighting levels up and upkeep down is a real problem.

An armored clad unit consisting of specially designed alsak aluminum reflector enclosed in a protective steel housing and a hinged, tempered glass cover which seals against dust, moisture and corrosive fumes.



"VAPOR-TITE" FLUORESCENT

For lighting locations where excessive amounts of non-combustible vapor or dust are present.

Approved as vapor tight by U. L., a one-piece porcelain enameled unit with hinged glass cover and easily accessible control equipment. Available in standard and angle mountings; also Plexiglass covers.

"ELLIPTO-LITE"

Most popular type floodlight ever designed for outdoor and protective flood-lighting.

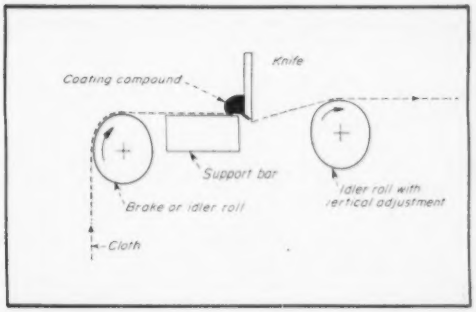
For protective floodlighting of factory yards and grounds and for lighting outdoor work areas. A procelain enamel floodlight with auxiliary inner aluminum reflector; available with a removable hood construction, lowering attachment, choice of mountings.

"TURNLOX"

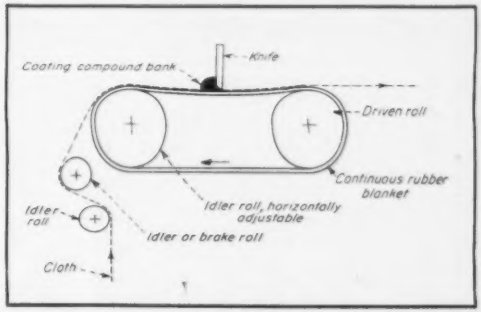
Detachable Hood Construction available with 7 types of Incandescent Reflector Units to speed maintenance and cut costs.

Permits removal of lamp and reflector as one unit for cleaning on floor or at bench.

For complete details on this equipment or any of the more than 2,000 Benjamin Lighting Units CONSULT YOUR BENJAMIN CATALOG . . . the Encyclopedia of Industrial Lighting.



FLOATING-KNIFE HEAD consists of a supporting bar, an adjustable coating knife, and an adjustable supporting idler roll. Tension and coating penetration can thus be varied.



BLANKET-KNIFE COATERS are good for coating light-weight fabrics as well as producing Spanish effects on embossed coatings. Tolerance and angle of knife over revolving blanket are adjustable.

paper. While some of these are only suitable for specialized uses, others are very versatile; and many different types of coating can be accomplished with a single head. With the exception of spray coaters, all are based on some variant of the knife- or roller-coating principle, or a combination of both. Generally speaking, the knife coater is best adapted to the application of high viscosity compounds while roller coaters are better for those of low viscosity.

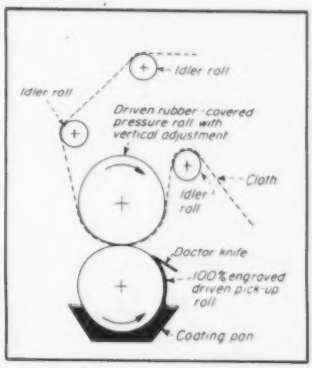
The two most common types of coating heads are the knife-over-roll and the floating doctor knife. The floating knife is the more versatile of the two heads, but at the same time greater skill and more knowledge of the art of coating is required of the operator.

The knife-over-roll coating head, often called a Scotch or rubber spreader, has long been the standard of the rubber-solution coating industry. The knife is centered over a roll covered with rubber or synthetic rubber and is vertically adjustable. Some heads also have an adjustment that permits the knife to be swung in an arc so that the angle of the knife to the roll can be varied from the vertical.

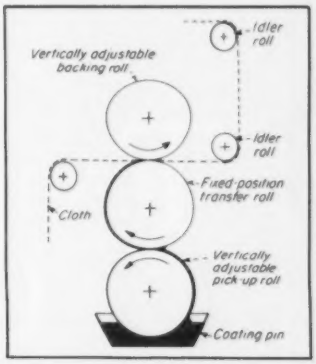
This type of head is ideally suited for the coating of heavy-weight and closely woven fabrics. The amount of coating can be uniformly gauged and applied by control of the clearance between the backing roll and the knife. The amount of coating and the degree of penetration can also be controlled by the width and contour of the coating knife used.

This method, however, is not particularly well adapted to the coating of open fabrics since the pressure created between the knife and the roller tends to push the compound

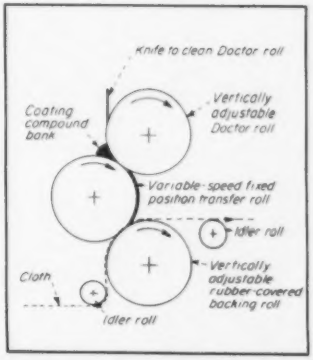
(Continued on page 216)



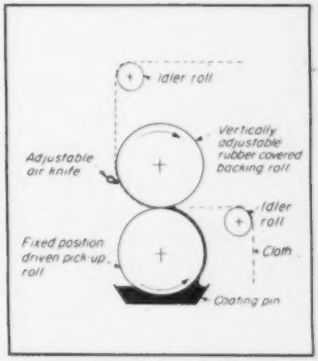
OVER-ALL ENGRAVED ROLL with a doctor knife produces a uniform coating. The amount of application to the fabric can be varied by substituting rolls with different depths of engravings.



TRANSFER ROLL COATER has three rolls. The bottom one is made of brass or other metal; the middle and top backing rolls are covered with synthetic rubber. Fabric coverage is improved with an engraved pick-up roll.



REVERSE ROLL COATER is probably the most accurate of the coaters because the doctor roll at the top is vertically adjustable for various thicknesses and penetrations of coatings as desired.



AIR-KNIFE COATER is useful for the uniform coating of uneven surfaces and the maintenance of contour. Through the "slotted-pipe" knife the flow of air across the fabric surface is adjusted and maintained.

TEXTILE BANKING COMPANY

Inc.

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

Are You All Wet About WETTING AGENTS?

►Wetting tests can be made valuable and truly representative if they are designed to fit your process and if they are used properly.

1. Present tests don't consider specific processes.

2. Present tests ignore fiber and fabric qualities.

3. Present tests are O.K. if performed realistically and if they are correlated with plant runs.

By SIDNEY M. EDELSTEIN, Technical Director, Dexter Chemical Co.

IN THE EXAMINATION of wetting agents, we must change our concepts, for our problem is neither the more accurate determination of the time of wetting in a particular test nor the more accurate control of the conditions of the test. Our problem is to relate the results of these tests to the many hundreds of practical problems we constantly encounter.

Based on a paper delivered before a recent meeting of AATCC.

Lab Tests Alone Give Wrong Evalution

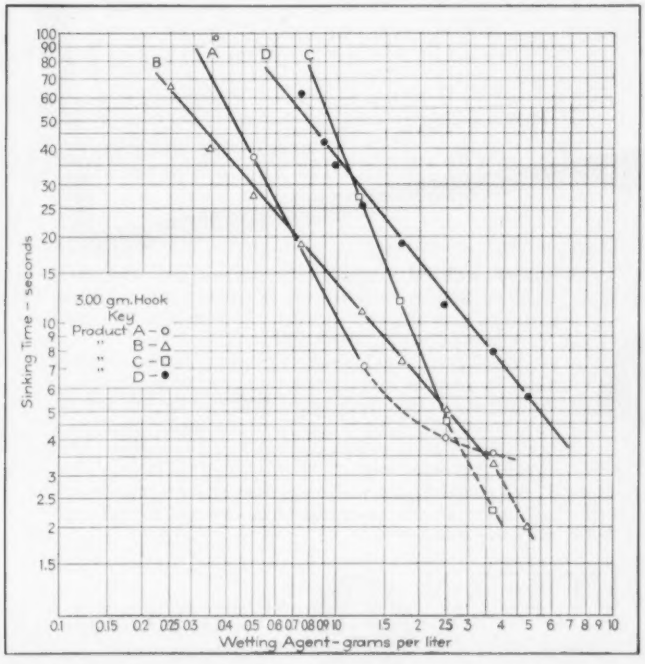
We are all after the same thing whether we are manufacturers or users of wetting agents. We all want to make or buy the most efficient products from the practical-use standpoint. What has been happening in many cases, however, is that the manufacturer has been forced to make products that show up well under particular test methods rather than under particular practical conditions.

The most widely used wetting tests are based on the time of sinking of cotton yarn or fabric held under the surface of the test solution by a weight or on the time of sinking of unweighted yarn or fabric dropped onto the surface of the test liquid. In these tests, the conditions are essentially static; and there is a large volume of liquid in relation to the volume of the fibers. This set of conditions is probably the simplest for wetting a textile material. Even so, the actual wetting phenomena must be quite complex. These consist of the wetting effect of the solution on the natural cotton wax on the surface of the fiber, the wetting effect on the cellulose itself, as well as the wetting and displacement of the air held by the fibers.

Fibers Have Different Wetting Characteristics

Now, the forces at work in the wetting of the test cotton must be different from those at work in the wetting of other fibers. With each of the other fibers we have completely dif-

(Continued on page 228)



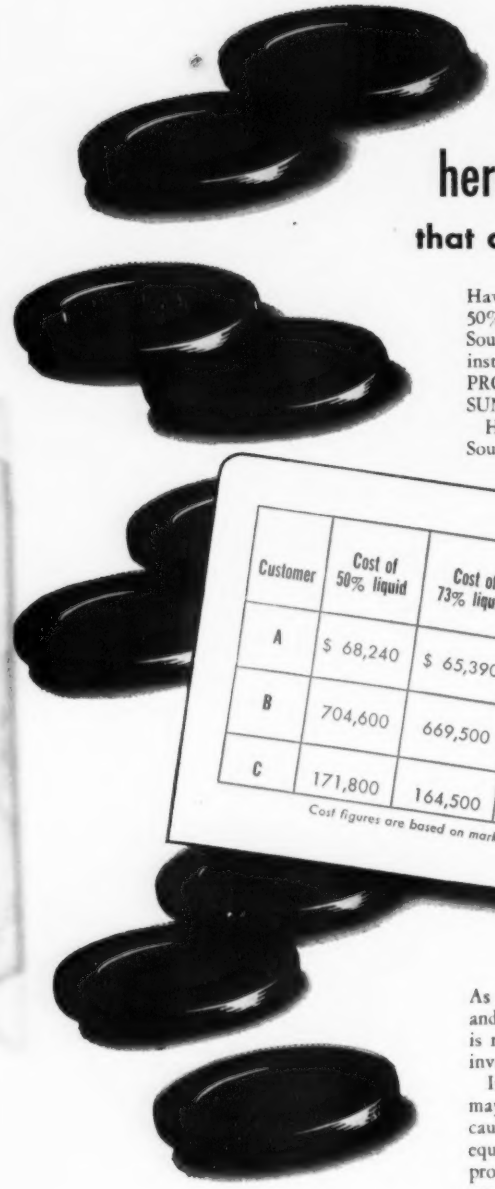
TYPICAL SINKING-TIME CURVE shows relative wetting effect of four different agents. Draves test, 3 gm. hook used.

You may be fooled by wetting tests because:

1. Plant-processing variables are ignored.
2. Old tests are based on one fiber —cotton.
3. New fibers and blends don't conform to the old rules.
4. Fiber form is not considered (raw stock, yarn, fabric, etc.).

You should do these things:

1. Make accurate wetting curves of every wetting agent—plot concentration vs. sinking times at operating temperatures.
   a. Use the fiber or blend in the form you are running.
   b. Use the solution in which the fiber is being processed, or a laboratory approximation.
   c. Use the slope factor of wetting curves as a guide.
2. Test production—run solutions routinely against the wetting curves.
3. Buy your wetting agents only after testing for your process—make the slope of the wetting-curve your guide.



here's a blue chip investment

that can't miss paying good dividends

Have you recently studied the advantages in changing from 50% liquid caustic soda to 73%? A number of Columbia-Southern customers have made the change and in every instance the results have proved conclusive: A HIGH PROFIT RETURN ON EVERY CARLOAD OF 73% CONSUMED.

Here's an actual case study of three typical Columbia-Southern customers who made the change.

Customer	Cost of 50% liquid	Cost of 73% liquid	Per Cent of Savings	Total $ Savings per year	Cost of equipment and installation necessary to effect such savings	Return on Investment First Year
A	$ 68,240	$ 65,390	4.2%	$ 2,850	$2,650	108%
B	704,600	669,500	5%	35,100	3,500	1003%
C	171,800	164,500	4.3%	7,300	2,055	355%

Cost figures are based on market prices and freight rates effective January 1, 1952

As you will note from the study, the cost of the equipment and installation necessary for this profitable changeover is more than offset by the first year's savings. The small investment earns big dividends.

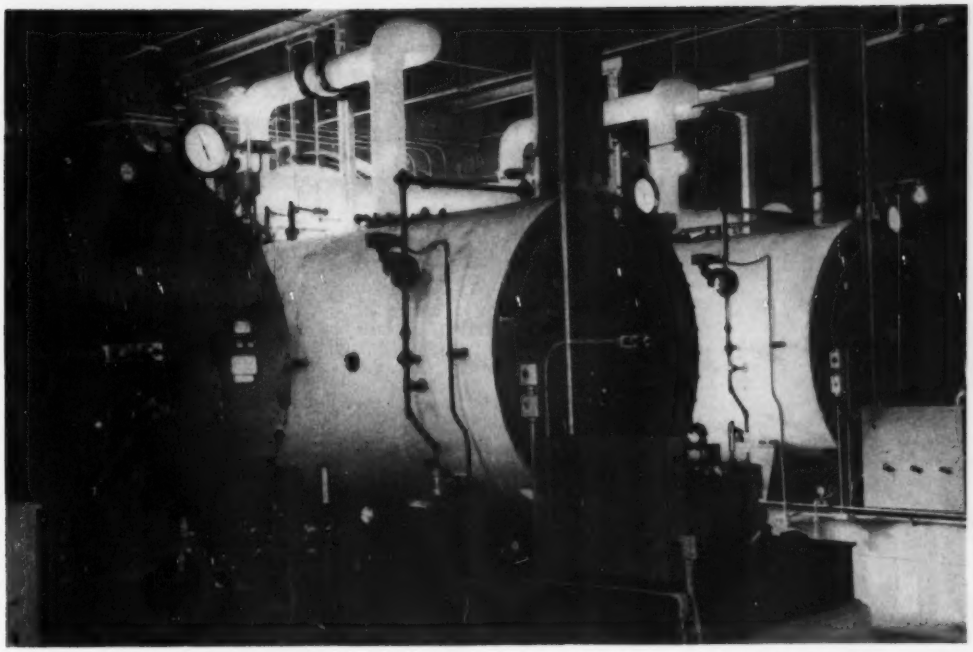
It will pay you to investigate today the extra profits that may be yours by making this change in your purchase of caustic soda. There is no problem in securing the diluting equipment. The system has been thoroughly tested and proved by over 10 years actual experience in applying high grade 73% caustic soda.

Write today. We will assign one of our technical specialists to discuss your individual case and to make recommendations.

COLUMBIA-SOUTHERN
CHEMICAL CORPORATION
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

EXECUTIVE OFFICES: Fifth Avenue at Bellefield, Pittsburgh 13, Pennsylvania

DISTRICT OFFICES: Boston, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Houston, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, St. Louis



LITTLE MANPOWER IS NEEDED to keep these automatic boilers operating. The instruments can be checked at any time to measure the boiler output and compute the efficiency. Only two boilers are used at Hoosac to supply the necessary steam. The third unit is idle and is rotated so that each boiler receives periodic service and preventive maintenance.

At Hoosac Mills—

BOILER Worries Are Over

▶ Savings of $15,000 per year in fuel and $10,000 per year in labor were shown when hand-fired boilers were replaced with automatic boilers. Now low-pressure steam, connected to the boilers, insures controlled steam in each process in the plant.

By R. M. PLACE, General Mgr., New Bedford Div., Hoosac Mills Corp.

THREE NEW 150-hp. boilers that replaced hand-fired units at our New Bedford Div. will pay for themselves in less than two years.

A comparative study of past and present fuel costs shows that 275,000 gal. of oil at 5¢ per gal. will provide the steam for a year of operation. Last year we produced the same amount of steam with 2,000 long tons of coal at $15 per ton. The fuel saving alone is over $15,000 per yr.

The fully automatic operation of the boilers has led to a reduction in plant personnel and has minimized boiler maintenance. Hand firing and the problem of fly-ash removal and disposal have been eliminated since the oil leaves no residue. The labor saving is $10,000 per yr.

Factors Considered in Purchasing

In deciding what type of boilers to install to replace hand-fired boilers that were reaching the end of their useful life, we gave primary consideration to:

1. Efficiency of steam generation (fuel consumption) to supply the 12,000 lb. of steam required each hour at peak capacity for heating and processing.
2. Reduction of plant personnel through safe, automatic operation.
3. Cleanliness, which is important to textile manufacture.

What Was Selected

A study of past-performance records and the prominence of similar units in the textile industry showed that self-contained steam boilers would best fulfill the necessary requirements at our plant. The three boilers selected were self-contained oil-fired four-pass units, each rated at 150 bhp., manufactured by the Cleaver-Brooks Co., Milwaukee, Wis.

An influencing factor in the selection of this unit was the thermal-efficiency characteristics of the unit in relation to the steam output. This point is important since the boilers in our plant operate over

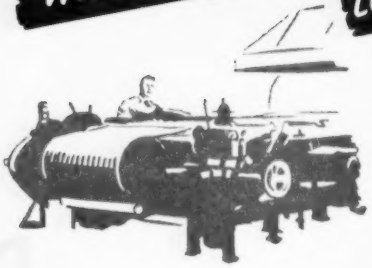
(*Continued on page 210*)

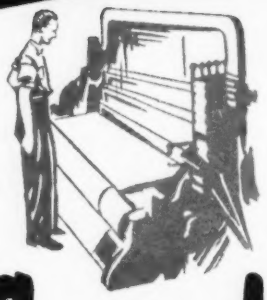
Reduce:

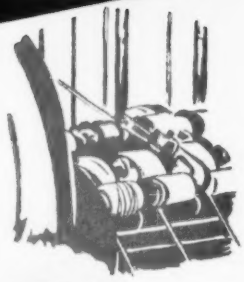
WARP BREAKS

LOOM STOPPAGES

LAP-UPS







Brytex Controls Fibers

Prove the practical value of any Brytex product at our expense!

FOR SLASHING

LUBRENE — A well known, versatile product that increases pliability and lubricates the warp. For rayon, acetate, cotton and nylon when used with gelatin, dextrine, soybean, and certain resins.

SPUN SIZE S — Warp sizing gum for spun acetate, spun rayon and blends with wool. Insures maximum penetration *plus* pliability. Reduced shedding and balling improves weaving efficiency. Easily removed in finishing.

SYTEX — New warp size for viscose and acetate *filament* yarns. Deposits an extremely tough, pliable film for better weaving. Runs cleaner than gelatine or casein type sizes. A highly concentrated powder that dissolves readily. Easily desized.

FOR FILLING

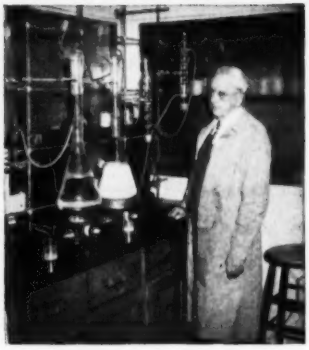
CONDITIONOL 173 — Efficiently sets the highest twist, deadening yarn and insuring kinkless filling; also increases breaking strength. Contains inhibitors against rust and mildew.

FOR ROVING

CONDITIONOL W — Eliminates STATIC in woolen, worsted and blended fibers! Increases yield, decreases double ends on cards, roving and spinning frames.

FREE TRIAL SAMPLE

Which of these Brytex products could make your job easier? Ask for a free sample of any that you would like to give a mill test. It does not obligate you in any way and may be the cure for most of your fiber control problems.



Send your problems to Bryant

We maintain an unusual laboratory, headed by a seasoned textile man and staffed with competent chemists. Chemical problems are realistically attacked with an intimate knowledge of mill conditions. We invite you to put your fibre control problems in our lab without cost or obligation.

Brytex PRODUCTS

BRYANT CHEMICAL CORPORATION

N. QUINCY 71, MASS. — BOX 2301, SPARTANBURG, S. C.

Pointers FOR SUPERVISORS

How You Can Find Out What Employees Are Thinking

► Supervisors hear a lot about "communications"; rightly so, because it's the keystone of industrial relations. But to be effective, communications must be two-way. You can't just talk to your employees—you have to listen to them, too. Here are some suggestions on how to be the kind of good listener who finds out what's really on a worker's mind.

By MACON P. MILLER
Director of Industrial & Public Relations, Fieldcrest Mills

HOW CAN A SUPERVISOR get maximum information and valid statements of feelings, opinions, and facts from an employee? The answer is by listening, by allowing the employee to say what's on his mind.

That sounds easy, but listening is actually one of the most difficult skills a supervisor has to master. By the very nature of his job, the supervisor habitually gives direct instructions and orders to his workers. The approach is straightforward and the supervisor does the talking. In addition, his is the voice of authority in the department.

To get information, however, he has to shift his ground. He must for a time forget he is supposed to have all the answers. His approach must be one of humility. He must reserve judgment and decision until he gets the whole story. The first requirement, then, is not one of techniques but of attitude. The supervisor must genuinely invite information from employees and encourage freedom of expression.

As to techniques, the foreman has about as much need of interviewing skill as a newpaper reporter. A common error among reporters is the practice of doing too much talking and not permitting the person being interviewed to give complete answers to the questions. The same error is committed by many supervisors. In addition, the supervisor may feel he is privileged to take the lion's share of the interview since he is in a position of authority. No doubt he has that privilege, but he is unlikely to get the full story from the employee by using it.

The better approach is to stimulate the employee to talk by a rather general question on the particular topic and to help him continue talking by:

1. Rephrasing or restating his expression of feeling. ("You feel that you were not given consideration for the promotion.") A statement of this sort lets the employee know you understand him, doesn't shift his train of thought, and usually elicits additional details. ("No, I don't think I was. And here's another thing I didn't like.")

2. Avoiding the making of statements that chide the employee for his attitude or condemn him or put him on the defensive or lead to an argument. Such statements will force the employee into rationalizations and emotional replies that will becloud the basic issue.

Of course, the supervisor in most cases has to take a position or give the employee an answer, and he may have to cite policies, rules, or clauses to clarify the situation for the employee. The danger lies in doing this prematurely, before the supervisor really finds out what's in the employee's craw. By intruding upon the employee's story to "set him straight," the foreman may never actually get to the heart of the matter. The employee has got to be "heard out" before he can be "straightened out." Otherwise the supervisor may miss the target. He may direct his cure against a minor symptom and leave the real illness untreated; he has not allowed the patient to give him enough information for a genuine diagnosis. Thus a "settled" complaint can become a grievance.

These same techniques can be used in group meetings that some foremen hold with employees to discuss complaints or problems connected with waste, safety, efficiency, quality, maintenance, etc.

It is now a popular practice to conduct discussions in such a way as to lead the employees to arrive at conclusions or make suggestions that the supervisor already has in mind. This technique is supposed to give the employees the idea that they are actively participating in plans and decisions affecting the department.

Let's assume that the foreman has a quality problem. He may decide definitely that he is going to do such-and-such about inspection. But instead of simply informing his inspectors about the steps to be taken, he may call them together and attempt to maneuver them in volunteering this predetermined solution.

This technique may easily backfire. When a supervisor states that he wants the ideas of employees on a particular problem, he should be completely receptive to those ideas. He should genuinely want those suggestions. He will probably come into the meeting with ideas of his own, but he should be ready to modify his own thinking so he can incorporate employee ideas into his plan if they have merit.

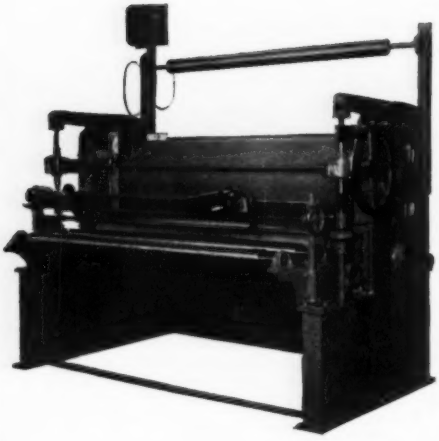
If the supervisor has a rigid plan to present to employees, a plan that he does not intend to change, he should hold his group meeting for the sole purpose of giving information. And he should announce his intent. Outlining a well-considered plan and explaining the reasons and reasoning behind it is likely to be appealing to employees—more appealing than an invitation to make suggestions that are rejected or accepted on the basis of how well they fit in with the supervisor's preconceived plan.

Employees are not fools. They can readily detect the extent to which their ideas are considered. And they can sense it when they are being maneuvered.

One mistake a supervisor should definitely avoid is to ask employee suggestions on completely obvious matters. Instead of feeling he is participating, the employee is likely to respond with "What kind of fool is he?" or "What kind of fool does he think I am?"

Cook absolutely level padding

P&N 2 ROLL PADDER



Sturdy box-type framework, fool-proof pressure control and reliability combine to make this Cook Padder M-5602–2 increasingly popular where absolutely level padding is required. It has particular appeal to dyers of expensive fabrics.

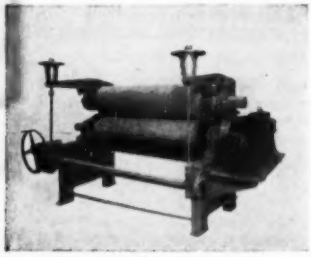
The lever-set pressure control is greatly improved to eliminate any binding and includes a new design roll separator. Furnished in 5, 10, or 15-ton capacity. Furnished any desired width.

With one stainless and one rubber or two rubber covered rolls. Rolls in self-aligning spherical bearings and designed to eliminate deflection. Centrifugally cast stainless roll optional.

Pans, or boxes of stainless steel, plain or jacketted, in various designs to meet your requirements for padding dyestuffs or finishing materials. Pan hinged for easy cleaning.

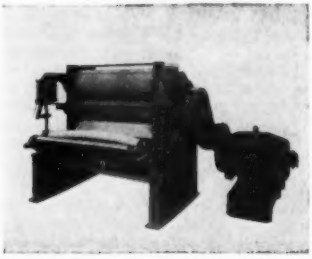
Pressure leveling, expander, let-off and take-up attachments as needed.

All Cook machinery is fabricated in our own shops allowing design flexibility *without* premium cost. Stainless steel fabrication eliminates broken castings and factory-made repair parts. All machines are guaranteed to perform as specified. Your request for information will receive prompt attention.

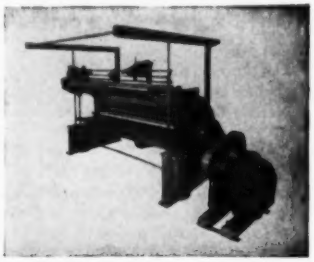


RUGGED STYLE C-M 1833-1 Rugged box-type framework, special bearing mountings and accessibility make this machine appeal especially to plant engineers. This new type bearing mounting saves much expense and lost time when removing rubber rolls for buffing in the plant shop and when replacing them. Furnished with microset, pneumatic or our improved lever-set pressure control in 5, 10, or 15-ton capacity.

Rolls expertly engineered to eliminate deflection. Centrifugally cast stainless steel roll optional. Self-aligning spherical bearings. Pans, or boxes, of stainless steel, plain or jacketted.



COOK 3 Roll Padder M 364-2 Where slippage is a problem this machine provides the solution. Drive is to the center roll which is in fixed position. Pressure is applied to both nips through an ingenious arrangement of pneumatic control. Chain drive is to top roll and necessity of keeping top and bottom rolls exactly same diameter is eliminated. In a short time this padder has proven its value in a number of plants. An automatic mechanical device keeps the rolls separated when not in use. In 5, 10, and 15-ton capacity and in any desired width.



PNEUMATIC STYLE A 1586-1 Box-type frame construction incorporating finest quality materials makes this a popular all round machine. Pneumatic pressure designed with cylinders inserted into frames and includes automatic hold up for top roll. Guiders and guide rolls adjustable vertically. Machine is furnished in 5, 10 or 15-ton capacity. Both rolls rubber covered or one made of stainless steel as shown. Roll bearings are self-aligning spherical roller type with 100% overload rating. Hinged stainless steel pan with or without jacket. Let-off and take-up attachment when required.

COOK-P&N MACHINE CO., INC., 365 Dorchester Ave., Boston 27, Mass

Exploring

The Textile Community

A NEW KIND OF SCHOOL—
Community-Built for Community Use

► Gaston County Technical Institute is a fine example of what a community can do when it sets out to solve its own problems, to plan intelligently for its own needs, and to insure its own future. Its people and its industry are benefiting from the results of this county-wide cooperation.

By MILDRED BARNWELL ANDREWS

MILDRED ANDREWS

This is a story of community enterprise and building in the present to insure the future. It is about a project, county-wide, that could be emulated by other counties in other textile states.

Gaston County, in North Carolina, is the most highly concentrated combed-yarn area in the world. More than 100 combed-yarn spinning mills are there, mostly around Gastonia, but located also in Belmont, Mount Holly, Cherryville, McAdenville, and other small and thriving communities. The county has the usual school system, and a few years ago, one of its industrial leaders, Carl Rudisill, then doing a stint in the state assembly, secured legislation and appropriation for a state-supported textile vocational school, which was built and successfully operates near Belmont. But that was not enough, for the combed-yarn industry especially needs highly skilled and trained employees.

Last year Brice Dickson, secretary of the Gastonia Chamber of Commerce, conceived the idea of a county-built and university-operated technical school.

"Well, for goodness sake," said everyone, "we've needed that all along—why didn't we think of it before?" Automatically, the Gaston County Technical Institute became "our school" for "our folks," and its success was assured. A. G. Bell, president of the chamber of commerce, gave the project his full support, but the real work was headed up by C. C. Dawson, who for more than 40 years had been a textile-manufacturing executive and a community leader in all civic affairs that denoted progressive and constructive planning for the people of Gaston County. While vice-president of Cramerton Mills, he served as president of the Southern Combed Yarn Spinners Assn. (he is now its executive secretary) and a member of the board of directors of the N. C. Cotton Manufacturers Assn. So he knew of industry-wide problems as well as local mill and community needs. It was "Dawson" who had to raise the money, and in a year of depressive factors it didn't sound like an easy job. He worked harder on the school job than he had ever had to work while running one of the largest textile mills in North Carolina.

A. K. Winget, Jr., as trustee of N. C. State College for the institute, is treasurer of the fund.

All industries and business firms of the county were invited to participate in the technical institute fund drive. Textile mills were asked to subscribe on the basis of 5¢ a spindle. And any individual who wanted to could subscribe to any extent desired. It was really inspirational to see the enthusiastic interest and support gained in each little textile community.

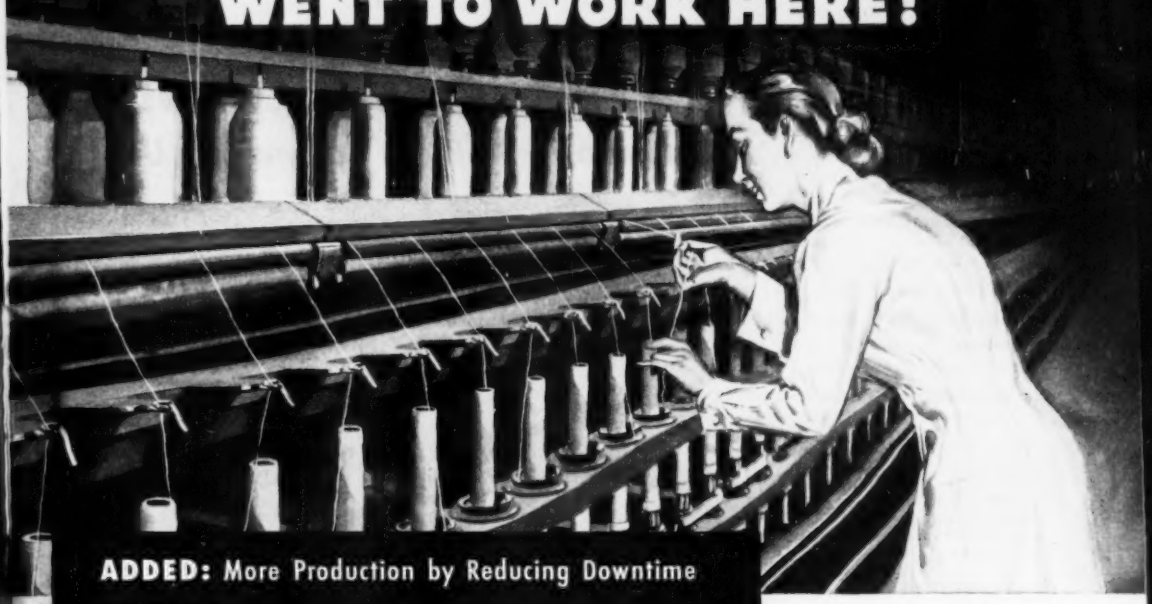
"Of course, textile mills put up a big part of the $60,000 needed for the building," said Dawson, "but we got some other subscriptions that were pretty heart-warming. One man came to see me with ten dollars for the fund. He wanted to know if it would be acceptable. He said he had no connection with the textile industry and didn't have much money, but he knew the school was such a fine thing he just wanted to feel a part of it."

Today, students of the county who cannot go off to college but who want technical training look forward to September when the institute will open for its first regular fall term. One hundred students will be admitted for studies covering requirements of industrial engineering and personnel management. Their tuition, which will be nominal, will go toward operation of the institute. Professors will be supplied by North Carolina State College School of Engineering, a unit of the greater university system of the state. The school setup was planned by Colonel J. W. Harrelson, chancellor of State College; the dean of the engineering school, and the director of the college's extension work. James I. Mason has been selected to serve as director of the institute, which will be eligible to confer certificates from State College to graduating students.

Thus, one community with zeal and spirit has taken a great step forward in the new South-wide educational movement directed toward regional needs. A better community will result, for within its boundaries the more ambitious young technicians will be trained to step into their future with mental equipment suitable for promotion, prestige, and successful careers in the county's largest industry.

All this ties in with the trend in the textile industry of plowing back a large portion of its earnings for educational opportunities for its younger generation. It is estimated that many millions of dollars have gone into scholarship funds and to textile educational institutions in the last five years. But, as far as we know, Gaston County's own Technical Institute is the first of its kind in community planning for textile needs.

Alemite "Friction Fighters" WENT TO WORK HERE!



ADDED: More Production by Reducing Downtime

ELIMINATED: Product Spoilage Due to Oil Stains

SAVED: A Total of $6740 Per Year

In a leading Southern Textile Mill*, machinery lubrication was posing more than its share of particular, costly problems. Oil stains, for example, were necessitating extensive reprocessing of finished mill pieces . . . proving troublesome . . . time-consuming . . . expensive. Was there an easier, more economical way to guard against friction's wear and tear?

To provide an answer, a trained Alemite "Friction-Fighting" specialist was called in to work with the plant engineers. After careful study, he recommended that an Alemite Mechanized Lubrication System be installed and tested on one machine in the mill's important Finishing Range.

Since that time, reprocessing of pieces – due to oil stainage – has been eliminated. Production has been increased through reduced "downtime." The amount of lubricant required has been far lower than ever before. And overall there is an estimated saving of $6740 per year!

You can get similar results! No matter what size or type of plant you operate, an Alemite Lubrication Engineer can show you dozens of ways of making worthwhile savings through more efficient handling of petroleum products. These are facts which you can readily confirm in your own time studies. The Alemite man will cooperate fully with your plant engineers in setting up a test. Contact your local Alemite Industrial Distributor, or mail coupon below – today!

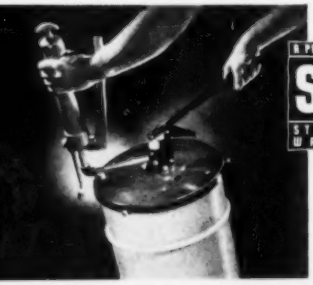
*Name on request

ALEMITE

MEANS EVERYTHING FOR LUBRICATION

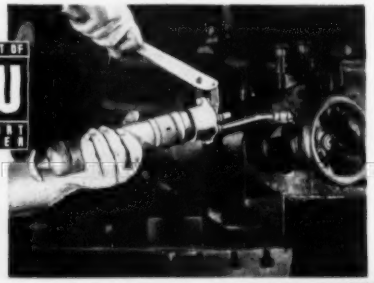
1. Methods 2. Lubricants 3. Equipment

Loading . . . transferring . . . applying! Alemite Mechanized Lubrication Methods save time, save work, keep lubricants refinery-clean barrel-to-bearing.



A PRODUCT OF SW STEWART WARNER

Combining strength with light weight, Alemite hand guns assure powerful, volume delivery of lubricant—with less work, in less time!



FREE! New Booklet

Please send me:

☐ "11 Ways to Cut Production Costs."

☐ Include Facts on OIL-MIST – the amazing new system that atomizes oil, circulates it to bearings under pressure.

ALEMITE, Dept J-52
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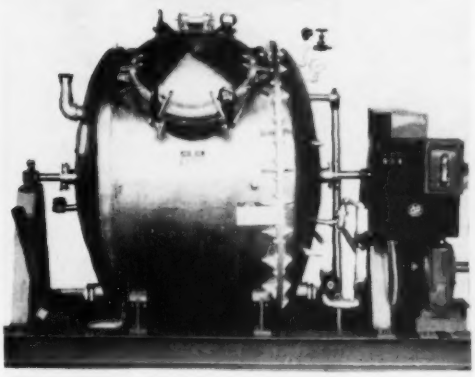
TEXTILE Equipment NEWS

High-Temperature, High-Pressure Machine For Knit-Goods Dyeing Perfected



ROTARY-TYPE HIGH-PRESSURE DYER makes Orlon and Dacron knit-goods dyeing easier.

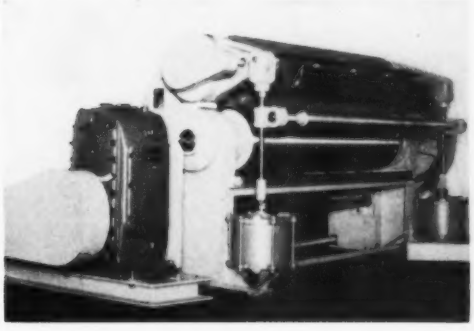
A rotary dyeing machine especially designed for piece-dyeing Orlon, nylon, and Dacron knitted goods has been perfected by Gaston County Dyeing Machine Co., Stanley, N. C., and is now being used successfully by several hosiery mills.

This is believed to be the first successful dyer built primarily to withstand the extreme temperatures necessary in dyeing these synthetic yarns. Reports from present users indicate that the equipment operates successfully and safely at a high temperature range of from 212° to 300° F., and withstands the high pressures required.

Special features of the new dyer, which distinguish it from the open-type machine now in general use at hosiery mills, include an enclosed dyeing chamber, shut off from the atmosphere; faster indirect heating for dye bath; and extra-rigid construction features. The machine is of stainless-steel construction.

Although the rotary dyer is designed to operate at high temperatures and pressures, it is not limited to these conditions. It may be used with equal efficiency at conventional temperatures. Models are available with capacities of 50, 100 and 200 lb.

Squeeze-Roll, Padder Combines Ruggedness, Versatility



A new heavy squeeze-roll unit for fabric up to 50-in. face that may also be used for padding has been announced by Birch Brothers, Inc., 35 Kent St., Somerville 43, Mass. This machine is fitted with a top rubber-covered roll and bottom stainless-steel roll, both mounted in self-aligning spherical roller bearings. The pressure is applied by air cylinders with individual pressure controls for each cylinder. The amount of pressure may be from 1 to 15 tons. The drive is from a motor through a variable-speed unit. This new unit is an exceptionally rugged machine and is designed so that the rolls do not have to be crowned, the manufacturer states.

SELF-ALIGNING BEARINGS and crownless rollers are features of this unit, which also has individually controlled pressure cylinders.

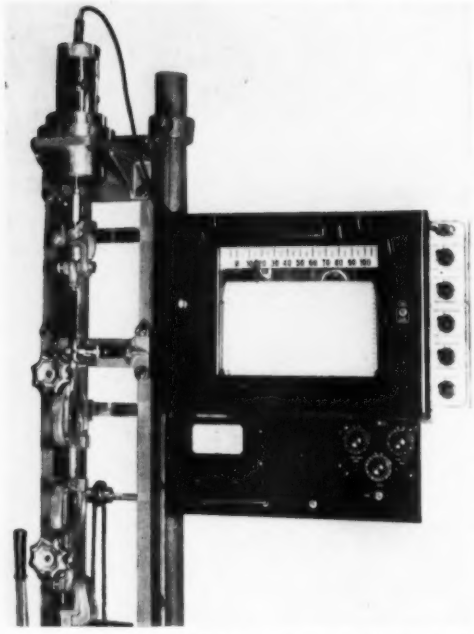
High-Capacity Warper Beams Available

A new line of large-package "double-capacity" high-speed warper beams has been developed by Allen Beam Co., New Bedford, Mass. The new line is designated as Series M, and these beams in the large-package series now on sale are adapted for all kinds of fibers.

The new warper beam has 36-in. heads, giving it a yarn capacity of approximately 80% more than previous beams. Construction is heavier throughout, with larger barrels containing heavier cast-iron reinforcement, heavier shaft with cast-iron hub extending through head, and heavier reinforcing rods and end plates than previous models. Heads are of the usual Allen construction in which sawed sections of kiln-dried lumber are combined to give what is said to be a balanced, resilient, and distortion-free unit.

Advantages claimed for the large-package beam are: fewer beams to purchase and keep in stock; less maintenance of beams and heads; less handling in the mill and in shipping; and longer runs without beam changeover.

Electric Weighing Device Replaces Scott Pendulum and Recorder



ELECTRIC WEIGHING RECORDER shown can be attached to the instrument, replacing the pendulum and permitting inertia-free testing.

An entirely new electrical weighing system for application to existing Scott Testers of the pendulum type is announced by Scott Testers, Inc., Providence, R. I.

This new inertialess weighing system replaces the conventional pendulum-type head and recorder, converting the tester from constant-speed-of-pull operation to constant-rate-of-extension.

Resistance of the specimen, or load, is absorbed by the deflection of an elastic spool, which is converted to a voltage and measured by a potentiometer with recording chart. On the chart, extension of the specimen is shown vertically and load is shown horizontally. Inasmuch as chart speed and clamp speed are both time functions, the chart becomes a stress-strain diagram directly, with either variable, load or extension, magnified or condensed as desired.

Main advantage of the Scott inertialess weighing system is that inertia is practically eliminated from the weighing mechanism. The improved sensitivity reflects the behavior of the specimen in more minute detail, particularly when minute changes are magnified as described above. It is also now possible to apply a constant rate of extension (the elastic spool of the weighing head elongates only 0.0015-in. maximum, a negligible consideration). The flexibility of drive and recorder rates and wide range of chart speeds available permit new studies of progressive test stages.

Application of the new system to existing Scott Testers is simple. It may be installed on Models J, L, Q and X-3. The replacement, which can be made by non-mechanical personnel, requires about a half hour, and consists of removing the pendulum head by loosening four bolts and installing the new elastic spool head with the same four bolts. With equal ease, the potentiometer recorder replaces the old recorder. Current is applied by plugging into any 110-v. outlet.

In operation, the specimen is inserted in the tester clamps in the usual manner, and the chart pointer adjusted to zero for the existing tare load. The driving mechanism is then set in motion, extending the specimen by moving the lower clamp downward at a uniform predetermined rate of speed. At the same time, by synchronized automatic action, the chart paper commences its downward travel at its predetermined speed. For literal stretch recording, the speed of travel of the chart can be equalized with the speed of travel of the moving clamp. Travel speeds of 0.1 to 20 in. per min. are presently available.

As the specimen is extended, the elastic spool in the head weighs the load by its deflection. This deflection is reflected in the horizontal scale, graduated from 0 to 100. As previously mentioned, the maximum deflection of the elastic member under maximum lb. load plus tare, is 0.0015 in., so that this has no practical effect on the recorded extension of the specimen. The accuracy claimed for the system is ¼ of 1% of the span, or better. Minimum zero drift is an important feature of control contributing to this high accuracy.

As to capacities, conversions are available from 2 to 10 lb. to 400 to 2,000 lb. The change from one capacity to another is readily accomplished by changing the elastic member rather than the entire head. This again can be accomplished by non-mechanical personnel, without special tools.

New Fluorescent-Lighting System Gives 40% More Light

A radically new fluorescent-lighting technique, said to represent "a milestone in the history of lighting progress," has been devised and placed in operation by Lamp Dept., General Electric Co., Nela Park, Cleveland, Ohio.

Applied first at the U.S. Department of Agriculture's Plant Industry Station at Beltsville, Md., the technique involves the use of a lighting system whose slimline fluorescent lamps operate on 360 rather than the conventional 60 cycles.

A major benefit is reported in the form of a 40% increase in the amount of light available from the lamps. This increase is accomplished by operating the fluorescent lamps at a higher current than would be practical at 60 cycles.

Another important advantage of the new method is that it makes possible the substitution of tiny capacitors, weighing only a few ounces, for the large conventional ballasts weighing several pounds.

The new system is expected eventually to find wide application in the lighting of large industrial plants, replacing in many instances the current practice.

Making possible the new lighting system are two important achievements—the design of a new lighting circuit and the development of a device to convert to high frequencies.

SERVING THE TEXTILE INDUSTRY SINCE 1899

SONOCO

Precision Paper Products

The SONOCO 3°30′ cone—a notable example of the research and technical "know how" that has kept pace with the ever-changing textile industry. This cone and its taper solves high speed winding, magazine creeling and knitting machine delivery, for rayon, nylon and other filament yarns, and is made with surface finishes to fit the specific job.

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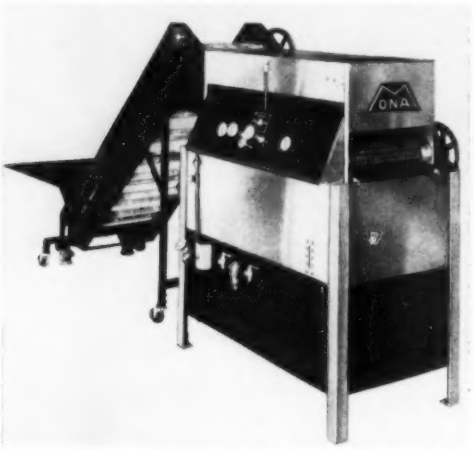
Conditioning-Setting Machine Handles Bobbins or Cones



ALL STAINLESS-STEEL construction is used throughout this new conditioning machine, which is said to be drip-proof.

A new, simplified, and versatile cold-water yarn-conditioning and twist-setting machine has been developed by Mona Industries, Inc., 65-75 E. 23rd St., Paterson 4, N. J., that can handle yarn on bobbins and quills or yarn on cones or other large packages.

For conditioning of bobbins and quills, the yarn is fed into the machine by a conventional hopper and feeding conveyor unit.

For conditioning of cones and large packages, the mobile feeding unit is rolled aside so that the operator can feed the packages into the machine by hand.

The Monalit-Duplex conditioning machine is of stainless-steel construction. All sides are enclosed, and all controls can be operated from the outside. The machine has been designed for more efficient yarn conditioning, simpler control mechanism, and easier handling and servicing.

The conventional wooden conditioning aprons, which permit only spraying the yarn from the top, have been replaced by modern stainless-steel-mesh conveyors. These conveyors are said to permit perfect spray, both from the top and bottom, thus assuring perfect conditioning of the entire yarn package in one operation. The machine is also said to be absolutely drip-proof.

For easier servicing and cleaning, the unit is of a three-section lightweight construction. The mobile feeding unit can be rolled aside, whereas the entire top section of the conditioning machine, including the conditioning apron, can be lifted off the lower tank and drive section for periodic easy cleanings of both the tank and conditioning conveyor.

The machines are constructed in various sizes to conform with mills' individual production requirements.

Thread-Waste Cutter Designed for Synthetics

A cutter designed to meet the problems of cutting the new synthetics and other thread wastes has been developed by Taylor, Stiles & Co., Riegelsville, N. J. Among its features is a 24-in. revolving knife cylinder that mounts two knives at opposite sides of the cylinder. This feature allows room enough for the uncut material to pass freely without jamming.

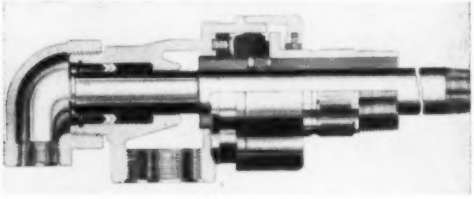
This new development is important when cuttings are long, as the material does not tend to blow back away from the knives.

A long feed roll, with bearings entirely outside the guide box and with ends shaped to urge the fibers toward the center line of the cutting element, also tends to "position" the fibers correctly for cutting and to prevent any possible winding of fibers around the feed-roll bearings.

The feed apron is raised so that the force of gravity helps to guide the fibers from the feed rolls to the cutting edge of the bed knife.

By easy adjustment of relative speeds of cutting cylinder and feed, any desired length of cutting can be secured and maintained. The cutting is a shearing action that assures clean, even cutting.

Rotating Joint Handles High Steam Pressures



FLAT NON-POROUS CARBON DISK used in this revolving joint is said to absorb shock by compressing rather than tending to separate.

A new revolving joint capable of handling up to 250 lb. steam pressure and temperatures from 200° to 500° is now available from Rotherm Engineering Co., Inc., 4911 W. Irving Park Rd., Chicago 41, Ill. The new joint is short in over-all dimensions, and is made in sizes from ¼ to 5 in. inclusive.

Rotation takes place on the flat face of a non-porous carbon disk, the opposite side of which is a ball seat. This design is said to permit the rotating sleeve to find its own rotating center irrespective of the eccentricity of the roll or threads. The shape of this carbon disk is said to eliminate all breakage, because in the event of shock it would have a tendency to compress rather than separate.

The seal inside the casing is a spring-seated Teflon wedge against a chrome-plated surface. The face of the rotating sleeve is chrome plated and ground for hardness.

The entire sealing assembly is one complete unit that can be removed without taking either member from the roll.

The joints are said to require no lubrication. They have no bearings and require no flexible hose for mounting, and they can be mounted with flexible hose if required.

Remarkable Resistance

You have to see a Textile Spring-Beard Needle in action to realize its remarkable wear resistance. Superior tempering, a special steel formula and rigid scientific controls — automatic and electronic — produce exactly the right combination of hardness and flexibility for the job a needle must do.

Wear resistance is only one of the advantages you get from Textile Spring-Beard Needles. You get stronger, longer-lasting needles that mean better performance, bigger profits.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile

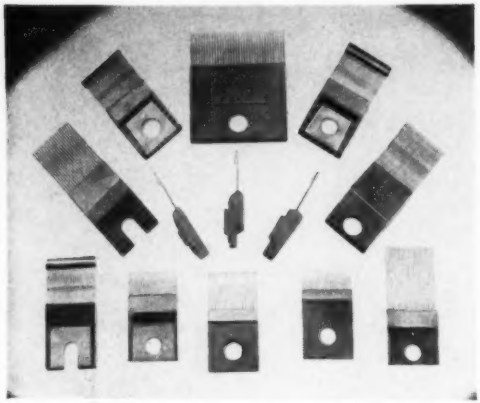
SPRING-BEARD NEEDLES

For Full-Fashioned Knitting

For Tricot Knitting

For more information, write direct or use Reader Service post card.

Raschel- and Tricot-Needle-Leading Service Announced



THESE LEADED PARTS are representative of those handled by Torrington's new needle-leading division.

A new needle-leading service for users of both raschel and tricot machines has been announced by The Torrington Co., Torrington, Conn., to meet increasing mill demands for Torrington needles and parts in cast-lead bases.

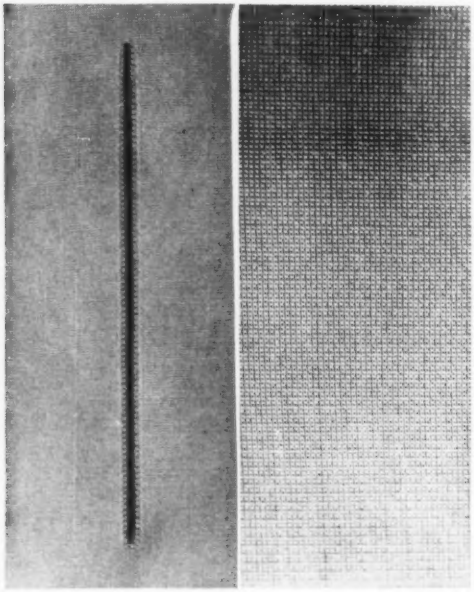
Complete leading, recasting, and reneedling services are now in full operation for users of raschel machines, and similar services for tricot mills are now being placed in full-scale operation as rapidly as the demand requires.

Extension of the Torrington needle-leading service to mill customers follows closely on the development of a separate leading department to meet the demands of a number of leading machine builders for leader units equipped with Torrington needles and other leading parts for use as original equipment on new machines.

A full line of parts, as well as both latch and spring-beard needles, will be supplied with precision-cast lead bases including thread guides, sinkers, sley points, stitch combs, etc.

In recasting operations on latch needles, used leads are melted down and the used needles removed for careful individual inspection. All worn or damaged needles are sorted out for return to the customer, while all those needles found in good condition and giving promise of sufficiently long service life are grouped together and remounted for re-use. All leaded units are individually mounted in specially constructed shipping containers so that they are fully protected from damage during transit.

Needle Out is NOT Stop Mark



THE NEEDLE-OUT MARK in the fabric at left is not a stop mark, as TW said in its March issue. On the contrary, the fabric demonstrates the ability of the new mechanical tricot-beam let-off developed by Robert Reiner, Inc., to eliminate stop marks. The photo at the right shows the stop mark usually made when previous types of let-offs are used. [See TW, Mar. '52, p. 180, for full details.]

Continuous Feeding of Solutions Simplified by Proportioning Device

A line of proportioning weir tanks for solutions or suspensions has been developed by the Omega Machine Co., 345 Harris Ave., Providence 1, R. I. These devices consist of a specially constructed tank incorporating a stilling chamber, an accurately machined rectangular weir, two outlet chambers, and a flow splitter, so arranged that the total flow of solution or suspension to the two outlets can be readily divided into any proportion.

The flow splitter is graduated into percent of total flow, is instantly adjustable, and has no moving parts. It may be fitted with a pneumatic or electric operator and is ideal for controlling the flow of liquids or suspensions in proportioning systems or automatic pH control systems.

Stainless Steel in Liquid Form Prevents Corrosion

Liquid stainless steel, a protective coating consisting of actual stainless steel reduced by a new process to a microscopically fine form (flakes) and combined with vinyl plastics to form a quick-drying liquid coating, has been developed by Slip-On, Inc., 401 Broadway, New York 13, N. Y. The coating is said to offer impermeability to moisture of type 18/8 No.-302 stainless steel in easy-to-apply form.

Liquid stainless steel can be applied by spraying, brushing or dipping.

Neither the resin binder nor the stainless steel changes appreciably with age, the company states. The coating is in the bluish gray, non-shiny cast of stainless steel. It is tack free in 5 min. or less, quick drying, and may also be baked.

MEET THE "Men You Can Count On" ...these 30 DIRECT Representatives of VEEDER-ROOT

William K. Biery

John J. Brannick

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Thomas L. Ellis

Samuel H. Fuller

William T. Heydt

George M. Isbell

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Charles C. Lombardi

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Harry E. Mansfield

James R. Mathieson

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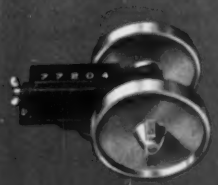
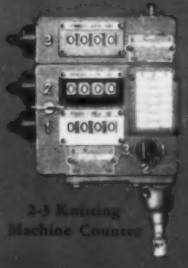
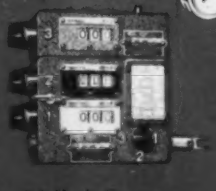
VEEDER-ROOT is nationally known as "The Name That Counts." And here are 30 good reasons... these experienced, factory-trained representatives who are always at your service for consultation on any counting problem in any type of textile mill. Just get in touch with your nearest Veeder-Root office.

VEEDER-ROOT INCORPORATED, HARTFORD 2, CONN. • GREENVILLE, S. C.

REPRESENTING THE COMPLETE VR LINE

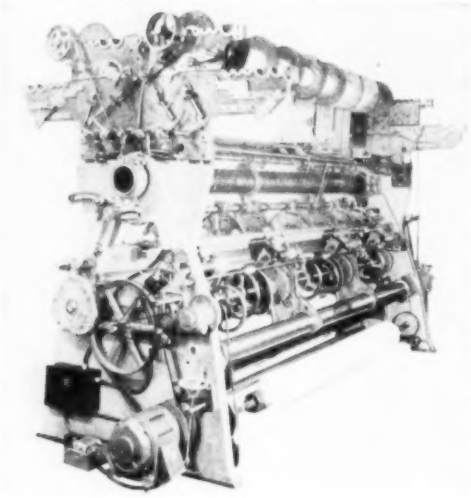

Double-Wheel Linear Counter


2-3 Knitting Machine Counter


2-3 Hank Counter

2-3 Pick Counter

Raschel Machine Features Ease of Adjustment



The new Reiner high-speed raschel machine, Model UR-1, is the latest unit in a series of Reiner-built raschel machines developed by Robert Reiner, Inc., Weehawken, N. J.

The new raschel machine has met the severest tests, the company states. It is of rugged, vibration-free construction, eliminating the use of a center leg. All fast running shafts are supported in ball bearings, and all oscillating bearings are provided with Oilite bushings. Split box cams are employed for easy set-ups with a cam-setting device, making close-gauge positioning possible. Special stress has been laid on ready access to all parts, so that exchanging or interchanging has been facilitated to the fullest.

The machine is being offered in a knitting width of 100 and 112 in. and in the following gauges: 24, 36, and 40. Up to eight guide bars can be used and one or two needle bars. Among the features are pattern-wheel or chain-link drive, stitch comb for one or two needle bars, crepe attachment, a fall or chopper plate, beam-feeding device for rubber fabrics and extra heavy yarn, plush points, and others.

MODEL UR-1 is built for ruggedness and accessibility. Easy adjustments and versatility are claimed by the maker as features.

Time-Temperature Controller Useful in Dyeing, Finishing

An electronically operated circular-chart controller that can control industrial processes according to time-temperature schedules has been developed by Minneapolis-Honeywell Regulator Co., Brown Instruments Div., Wayne & Windrim Aves., Philadelphia 44, Pa.

In instances where both time and temperature control are important for product quality and efficiency of operation, the new instrument has an integral-program cam mechanism that automatically positions the instrument control point in accordance with a predetermined program.

This instrument combines within a single case measurement and recording on a 12-in. chart, automatic positioning of the set-point index as directed by a transparent program cam, and automatic program control of the variable.

The combination of these functions in a single instrument has resulted in economy not previously available when it has been necessary to use another instrument or devices separate from the controller.

The standard Brown continuous-balance system is used for measurement. It is available in both electric and pneumatic control.

An adjustable Micro-Switch assembly, operated by the cam, is optionally available. The switch assembly is used to de-energize the cam-drive motor, shut down equipment, operate signal lights, or perform other electrical functions at the user's option.

Button Guide for No. 50 Winder Has Long Life

A new all-purpose AlSiMag 192 button guide for Universal No. 50 cone winders has been developed by American Lava Corp., Chattanooga 5, Tenn. The new all-purpose button guide is said to have these features:

1. Easily threaded.
2. Yarn will not jump out.
3. Exact delivery point.
4. Winds large or small packages.
5. Tapered or straight packages.
6. External long life.
7. Low cost.

The manufacturer states that many mills have been running AlSiMag 192 guides of a somewhat similar design continuously for more than five years with no sign of wear. This long life has given mills extremely low guide costs per pound of yarn processed. Now new production methods resulting from volume selling of the new all-purpose button guide has enabled American Lava Corp. to lower its price, thus making it an even greater bargain.

These guides are stocked by Universal Winding Co., Providence 1, R. I., for immediate delivery under Universal No. 73-167-49. They may be ordered from Universal or from American Lava Corp., under GS-25534. Free test samples may be obtained from the manufacturer on request.

FIVE YEARS WITHOUT WEAR is the record claimed for this new button guide for the Universal No. 50 cone winder.

Specify WALKER HEDDLES

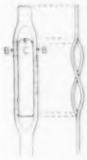
Because

THERE ARE WALKER HEDDLES
designed for every weaving need.
Yet these important basic design features
are common to all Walker heddles.

Engineering development and field service
back your selection of Walker equipment.
Consult your Walker or Draper representative
the next time you need loom harness
whether it be a single frame,
a few repair heddles,
or complete equipment of your mill.

Because

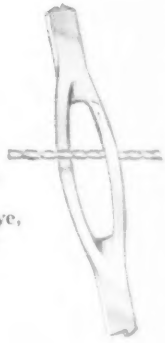
WALKER HEDDLE ROD SLOTS are vital
to the long-wearing qualities
of your heddles. These slots
are designed with fully rounded heads
and parallel walls to concentrate
all the wear
at the central point "C"
instead of the vulnerable
thin sides "B" of the rod slot.
This design feature of all
Walker heddles, assures longer
heddle life and greater freedom
of the heddles, to allow
for warp adjustment.



Because

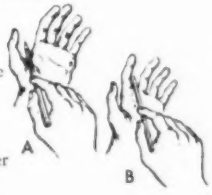
THE EYES of Walker heddles,
regardless of the type or turn
that you use, are designed
for easy yarn passage.
The broad base of the top
and the bottom of the eye
and the smooth polished sides
for the yarn to pass over
assure the minimum of chafing.

The enlarged diagram
of this typical Walker heddle eye,
shows how the walls of the eye
are twisted almost parallel
to the warp threads,
giving smooth yarn passage.
The warp remains parallel
even when you are weaving
high count fabrics.



PROVE IT TO YOURSELF

USING A PENCIL to simulate
a warp thread
note how easily it travels
when passed through the broad base
between thumb and forefinger
(bottom of Walker heddle eye
in Figure A) while the pencil
(warp thread) binds in the small
space between first and second finger
(typical of oval or V bottom
of ordinary heddle eye).



Because

THE WIRE of Walker heddles,
made from the finest materials available,
is highly finished and polished
for long heddle life
and clean, stain-free, fabrics.

For cotton, cadmium plated heddles are
recommended because of their lower cost.
Cadmium is highly resistant to corrosion
even in extremely humid atmospheres.
Its slight tendency to streak or smudge warps
is not objectionable since the marks
are easily removed during the finishing processes.

Wool and worsteds call for nickel plated
heddles since nickel does not smudge.

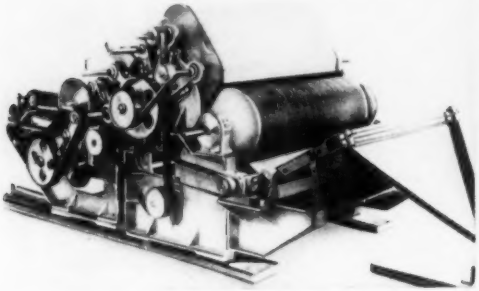
Stainless steel heddles are the best
for the weaving of all synthetic yarns.
Their long life and complete freedom from
staining give them the advantage of the lowest
long-run cost. They will not streak
or smudge the warp and are easily kept free
of lint and dirt. Since they are not subject
to corrosion, they last longer
and produce better quality cloth.

WALKER DIVISION OF D DRAPER CORPORATION

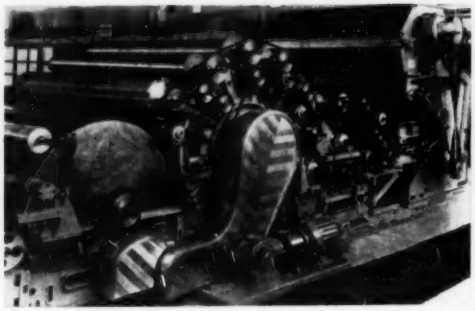
HEDDLES • HEDDLE FRAMES • REEDS

ATLANTIC & RUTH STS., PHILA., PA.

German Opening, Carding, Spinning Machinery Available Here



GARNETTING MACHINE is one of three units available for processing waste in all forms of wool and all synthetic fibers.



CARDING SETS have special electrically controlled drive that synchronizes speeds of all elements from feed to delivery.

A complete line of opening and spinning machinery for carded yarns, made by Textilmaschinenbau G. m. b. H. of Western Germany, is now available through Stellite American Corp., 60 E. 42nd St., New York 17, N. Y., agents for the U. S. and Canada. The following machines are available and can be delivered in 6 to 8 mo.: rag tearers, garnetts, drousettes, pickers, cards for producing padding and upholstery filling, mules, ring spinning frames, and accessory machines.

The openers, garnetts, and drousettes can be used for thorough preparation of all kinds of waste, including wool and synthetic threads and cuttings. The machines can be used singly or in sets.

The 2- and 3-cylinder carding sets are an improved version of the Detema cards formerly made in Saxony. Cylinders are 50 in. in diameter, doffers are 41 in. Standard width is 72 in., but cards of 80-in. width are being built.

Features claimed for the cards are: exchangeability of parts, ease of adjustment, regulation of speeds through gears, compact design that saves floor space, and a special motor drive that synchronizes speeds of all machines.

Presses for removing burrs are also available.

Bobbin Designed for Use On SG-1 Spinning Frame

A NEW BOBBIN designed for use with the new Saco-Lowell SG-1 Gwaltney spinning frame has been developed by American Paper Tube Co., Woonsocket, R. I., and Greenville, S. C. The new bobbin is 12 in. long and has a taper of 3/16 in. from the 1½-in. diameter at the bottom to the 1-5/16-in. diameter at the tip.

Plasti-weld construction is used in the new bobbin. In this method of construction, a molded-plastic seal of the special design required by the Gwaltney-frame spindle is simultaneously molded and combined with a metal tip and laminated bobbin barrel into a homogeneous unit that insures permanent precision.

Star Woolen Offers Laboratory Service Free

Analysis of blends for fiber content, etc., will be done without charge by the laboratory of Star Woolen Co., Cohoes, N. Y., according to a recent announcement by the company. The staff of a newly enlarged laboratory at the company is also offered to mills in the solution of problems involving the use or projected use of synthetic garnets.

The new service is made possible by completion of newly enlarged research and laboratory facilities and a substantially increased technical staff. Each process, including blending, picking, stripping, dyeing, desizing, and specialized manufacture of nubs, is laboratory checked to insure uniformity.

800 Gal.-per-Hr. Homogenizer Developed for Mill Use

A new homogenizer suitable for mill use in slasher rooms and finishing plants has been announced by Cherry-Burrell Corp., 427 W. Randolph St., Chicago 6, Ill.

The machine, known as the Model A-800-C Superhomo, has a capacity of 800 gal. per hr., and the company claims it has been thoroughly tested at the factory.

It is available with a single or two-stage valve, and all product surfaces are of stainless steel. Increased capacity has been obtained by using a large-diameter plunger rather than increasing the speed at the drive end. Slow speed at the drive end and extra-large helical gears help assure long life and low maintenance costs. Maximum operating pressure is 2,500 psi.

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Drum Up-Ender Stacks or Pours From Drums

DRUM EMPTYING can be done by the fork-truck operator without his leaving his seat with this new drum-handling attachment.

An economical hydraulic drum up-ender attachment that permits a fork-truck operator to pick up, transport, stack, and empty heavy drums without leaving his seat has been developed by Baker-Raulang Co., Industrial Truck Div., 1250 W. 80th St., Cleveland, Ohio. Drums can be rotated 90° for vertical or horizontal stacking, or tilted 45° below horizontal for emptying at any height within the lift range of the truck.

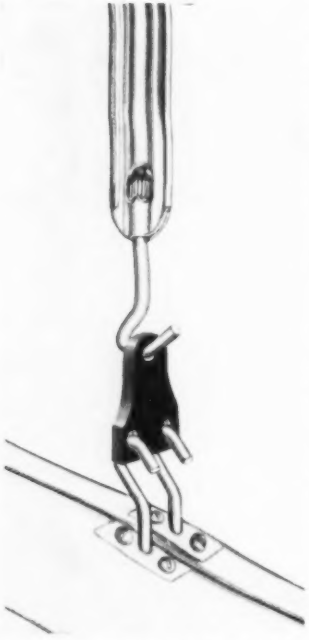
The up-ender adds a rotating "fifth purpose" to Baker's four-purpose carriage that already provides standard forks, fork-spacer, an automatic adjusting clamp and side-shifter in one unit. Demounting the unit is simple—remove two lock pins, unsnap one quick-detachable hydraulic hose coupling, and slide the up-ender off the forks.

The attachment consists of shoes that are "pinned" to the forks of the carriage. Mounted on the shoes are pivoted rubber-faced grab plates that clamp around the drum and hold it firm. The up-ending operation is accomplished thru a hydraulic cylinder mounted on one of the shoes. Operation of the hydraulic cylinder builds up pressure in an actuating accumulator mounted above it, which is used to return the drum to an upright position.

The operator maintains complete control of the up-ender from his seat. Clamp and tilt controls are dash-mounted at his left for convenience.

Both the four-purpose carriage and the hydraulic up-ender can be mounted on 2,000-, 3,000- and 4,000-lb. Baker fork trucks.

Twin-Harness Coupler Is Made of Fiber



NEW TWIN COUPLER that can be used in making two harness frames act as one in the loom has been developed by Steel Heddle Mfg. Co., Philadelphia, Pa. The fiber twin coupler is designed for use on $^{3}/_{8}$-in.-thick harness frames equipped with outside hooks instead of eyes. Metal-to-metal contact of previous couplers is eliminated.

Harness Stud Lasts Three Times Longer Than Previous Model

RAPID WEAR OF STUDS and slide hooks used on slide-hook frames can be eliminated by this new swaged-type stud, No. 10F, according to the manufacturer, Steel Heddle Mfg. Co., Philadelphia, Pa. The new stud is said to have a bearing area more than double that of the previous No. 10D stud. Swaged and case-hardened, the stud is said to outlive the previous stud at least three times over.

Heat-Resistant Grease Stands Continuous 300° Operation

A new premium antifriction bearing lubricant—Texaco High Temp grease—which considerably extends the efficient range of operation of ball, roller, and plain bearings at high temperatures, has been announced by The Texas Co., 135 E. 42nd St., N. Y. The new grease exceeds established military and industrial standards in affording unusual protection at temperatures up to 300° F. for continuous operation and 350° F. for intermittent operation.

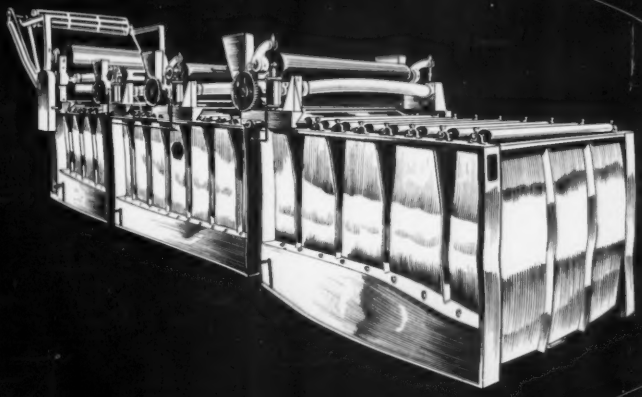
During its laboratory development, a variety of standard and special tests for antifriction bearing operation revealed that the new grease has excellent oxidation resistance, and similar desirable characteristics for high temperature operation, the company states. It far outran the hours-to-failure criteria of normal tests at 300° F. and continued to exceed test specifications at even higher temperatures.

An unusual characteristic of the new grease is the efficiency of its performance at high speeds as revealed in special ultra-high-speed endurance tests developed at Texaco's Beacon Laboratories.

Its water resistance makes the new Temp grease applicable in operations where long retention of grease and resistance to washing out are factors.

More
TEXTILE *Equipment* NEWS
on page 224

Think of it! NYLON MARQUISETTES AT 125 YARDS A MINUTE . . .



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NEW Dyes AND Chemicals

Resin Improves Abrasion And Shrinkage Resistance

Aquex, a vinyl-acetate co-polymer resin complex, aids abrasion resistance and reduces shrinkage of synthetic fabrics, is the claim of the maker, Aquex Development & Sales Corp., Whippany, N. J.

Fabrics treated with the resin not only are less subject to shrinkage than fabrics treated with surface resins on the market until now, but they also stand up under flat abrasion two or three times as long—which indicates a big increase in wearability, the company says.

The product is a soft pliable resin whose plasticizing effect reduces the damage of needle-cutting or burning. For this reason, seams of garments or other finished products made with Aquex-treated fabrics are said to hold better, look better, and last longer.

Substantive Softener Does Not Alter Lightfastness

Syntho-Softener C, a substantive product in the form of a highly concentrated white paste, is the latest development in the Syntho-Softener series of softening agents now being marketed by Hart Products Corp., 1440 Broadway, New York 18, N. Y. The product assures a durable soft, full, mellow hand with maximum draping qualities for all types of cotton, rayon, acetate, bemberg, linen and nylon fabrics. The use of this product is said to avoid the disadvantages of the cation-active finishes. It may be used on whites with no yellowing and particularly on colored goods since it does not affect the color or lightfastness of dyed goods or prints, the maker claims.

Syntho-Softener C will not cause marks-offs, odors, or rancidity. It is easily applied in the usual way in the pad, jig, dyebeck, or quetsch; shows no discoloration on pressing or aging of the goods; and will exhaust in long baths to give economical application, it is said.

Dyestuff-Sequestration Principle Makes New Stripper Effective

Antara Chemicals Div., General Dyestuff Corp., 435 Hudson St., New York 14, N. Y., announces commercial availability of Peregal ST, a new and effective stripping agent for vat, sulfur, and direct dyeings. Comparison tests indicate that in many cases the new stripper is ten times as effective as other agents considered excellent until now, the company states.

As a weakly cationic material, Peregal ST forms very stable cation-anion complexes with dyestuffs containing sulfo groups, or phenolate groups in aqueous solution. In stripping operations, once the fiber-dyestuff bond is broken, the dislodged dye is preferentially bound to the Peregal ST, for which it has greater affinity than for cellulose. Even after prolonged treatment this equilibrium cannot be shifted toward dyestuff-on-cotton.

Peregal ST, described as a colloidal dye-sequestering agent, stems from Antara's acetylene-chemical program. Samples and information can be secured from the company.

Good Shading Blue for Taupes, Grays Offered

Alizarine Blue SEN Extra CF, a level-dyeing, anthraquinone acid dyestuff (CI 1053), which gives bright, medium-blue shades of very good lightfastness that turns greener and brighter in artificial light, has been offered by General Dyestuff Corp., 435 Hudson St., New York 14, N. Y.

The bright, medium-blue self-shades produced with Alizarine Blue SEN Extra CF display good (5) to very-good-to-excellent (6 to 7) fastness to light according to the depth of the dyeing. This fastness property, its shade, and its dyeing properties have given this dyestuff a wide field of usefulness for dyeing worsted piece goods, hats, carpet yarns, knitting yarns, and other wool textiles when requirements for fastness to washing are moderate. Level dyeing and the property of going greener and brighter in artificial light are most convenient in dyeing both bright and dull mode shades, such as teals, tans, grays, and taupes, where it is desirable to have at least one component that goes greener.

Four Tailored Substantive Softeners Developed

A basic group of four new substantive softeners said to answer the complete range of requirements essential to the textile finisher has just been developed by Dexter Chemical Corp., Boulevard P.O. Box 1, New York 59, N. Y.

The new materials, which are based on complex amine structures, are said to exhibit excellent resistance to washing and dry cleaning and will provide a highly desirable hand on fibers. Each softener, with the exception of cationic Ampitol ZR, has been developed to overcome a specific problem normally experienced with the use of cationic softeners.

Ampitol A	for non-yellowing and lightfastness
Ampitol KZA	for compatibility with anionics
Ampitol KZ311	for non-yellowing and lightfastness and compatibility with anionics
Ampitol ZR	for straight cationic hand

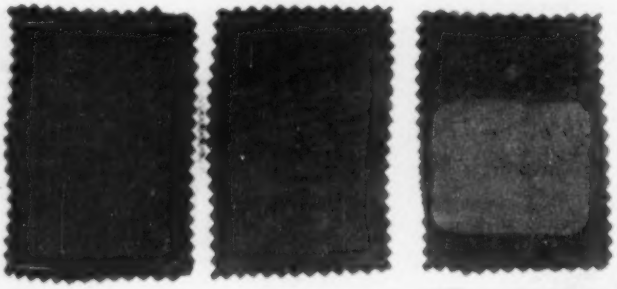
New Vat Dyestuff Gives Mode Shades of Brilliant Green

Indanthrene Brilliant Green BN Pure Double Extra Paste Fine, a straight anthraquinone vat dyestuff (CI 1101) especially for screen and roller printing of bright bluish-green self shades, has been developed by General Dyestuff Corp., 435 Hudson St., New York 14, N. Y. It is also useful for combination shades of excellent fastness properties on cotton, rayon, and linen.

Although this green is offered primarily for printing, it may be used for all methods of dyeing in place of the regular dyeing brands, Indanthrene Brilliant Green BN Pure Double Paste and Indanthrene Brilliant Green BNWP Powder. The new dyesutff is chemically like Indanthrene Brilliant Green B Double Extra Paste Fine but, being a purer product, gives yellower and brighter shades of the same fastness properties, the maker claims.

The bright bluish-green shades produced with Indanthrene Brilliant Green BN Pure Double Extra Paste Fine are characterized by superior fastness properties, which are adequate to meet exacting requirements in the use of cellulosic materials. Very good (6) to excellent-to-maximum (7 to

(Continued on page 226)



LIGHTFASTNESS IS NOT HARMED by use of Ampitol A (left). Blank (center) faded less than sample treated with usual cationic softener.

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Round Table

"GROSS INEQUITY" EDITORIAL

Dear Editor:

I have read with a great deal of interest your editorial, "Gross Inequity in the South," which appeared in the February issue.

. . . It is unthinkable that trends such as you have depicted will be allowed to go unchecked in this country.

I know of no medium which is so powerful and can do so much to check such trends as strong editorials such as yours.

JOHN P. BAUM
M. T. Stevens Southern
Milledgeville, Ga.

Dear Editor:

I cannot agree with much of the content of the (February) editorial as, in my opinion, it is inconsistent with existing facts. In many respects it overlooks some very practical considerations of the problems that industry is facing today.

Under existing taxation rates, it is no longer possible for industry to create reserves that will provide financing from its operations. Taxation has confiscated the capital reserves that industry once used to make America great and powerful.

It is not consistent, in my opinion, to criticize a state or community seeking to build up its industrial strength through local financial programs, and overlook the fact that the federal government itself has for years advanced vast sums of money to private industry through loans and grants from the public treasury. This latter is a far more vicious form of socialism at the very highest echelon.

Many of the billions advanced by the federal government will never be repaid, on the pretext that such advances are for the public defense, which in no wise contributes to economic or social betterment of our citizens.

The community financing that you criticize costs the taxpayer nothing, as this financing is repaid out of industrial earnings and represents a distinct gain instead of a financial loss.

It should be further borne in mind that many great industries created by federal-government financing will eventually revert to private industry at a tremendous sacrifice to the nation's taxpayers. The taxpayers are underwriting these federal credits, and will eventually participate in the financial loss.

If the American economy is to remain free, it is obvious that industry will have to be provided with capital. If conditions make it impossible for capital to come from private sources, then industry will have to obtain it from some source that is capable of supplying it.

If states and smaller political units can encourage industry to come into their midsts, it seems to me they are in reality much smarter and more progressive than some of our more conservative areas that are objecting to such community financing. Some of these may yet wake up to the necessity of following suit.

The situations in Mississippi and Tennessee are not directly comparable. I shall give you my comments on them in another letter.

But in any case, I cannot agree that the "new type" of financing program is a form of socialism, as these programs definitely leave all problems of management and operation in private hands and not in any sense under public control. The very essence of socialism is state management instead of private management.

JOHN A. MCPHERSON, SR.
Greenville, S. C.

Dear Editor:

. . . I hasten to congratulate you on writing such a splendid editorial, and I hope it will be widely circulated.

R. G. EMERY
Dunean Group
J. P. Stevens & Co.
Greenville, S. C.

Dear Editor:

Your viewpoint as to the "gross inequity in the South" is exactly opposite to that which you would get with a more complete appraisal of the facts and a more objective approach.

Consider this fact: The main sources of revenue available to most Southern cities

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"Stop telling people I'm out in the next room dyeing!"

are limited to levies on real and personal properties and business license taxes. These two categories account for about 50% of city revenue unless the cities own and operate municipal facilities. The remaining 50% of revenues are represented by federal and state grants to the cities.

The real gross inequity lies in this latter item and its magnitude.

State and federal authorities levy excise, corporation, and income taxes on local citizens and enterprises without consulting the local government. These revenues are poured into the state and federal treasuries, but payments back to the cities are severely discounted and are nowhere near in proportion to the amounts collected.

Furthermore, these remissions are usually fettered with "regulations" and "controls" as to their uses. By this device, state and federal governments pay for rural and foreign aid. So cities are denied the freedom to tax (and spend) according to their local needs.

Cities are justified in resisting this dangerous trend to a heavy-handed socialistic government that is fast proving oppressive. Only the local governments of directly elected officials can provide the municipal services, the schools, and fire and police protection with self-imposed and self-administered taxes. Only through them can you have a self-sufficient, self-respecting community in which private enterprise can flourish and find a contented labor market.

You are correct on one point: Municipalities are using a loophole to shift state and federal taxes into municipal treasuries. But your enlightened self-interest should cause you to support the cities in their struggle against big government.

SAMUEL E. MCCRARY
Councilman
Falls Church, Va.

ADJUSTING KNITTING CAMS

Dear Editor:

The directions for adjusting end and stitch cams, as given on page 112 of the January issue, seem far too meager for accurate results.

Polishing of stitch cams is a job for an expert. The concaves have to be alike and of the same angle, not over 50°; the casting-off points must be the same width; the angles opposite the concaves must be alike and preferably of the same angle as that of the end cams if one wants best results. The reason for the need of such symmetry of shape is that yarn robbing occurs in seamless knitting machines, and so it ought to be the same under both stitch cams.

For polishing these cams, we prefer to use small cots of emery cloth with the high-speed hand tool. We rub the cams but do not dwell on one spot.

The setting of the stitch cams can be best done on a good bench plate with a micrometer gauge to make sure that both stitch cams will draw to the same depth.

The setting given in the January article for the end cams was correct. However, when a machine knits both ribbed and plain fabric, it will be found necessary to adjust the sinker ring with the timing (bumper) screw because the angles of the end cams are different, as in the Scott & Williams HH machines.

The end cam with the steeper angle will knit a little shorter stitch, but this can be overcome by moving the sinkers in a bit earlier.

WALTER A. SIMOND
Essex Junction, Vt.

COTTON-MERCHANT RESEARCH

Dear Editor:

The cotton merchant wants practical research. He needs apparatus that will give him quickly the answer to his question: "What is the quality and spin value of this cotton?"

I am not unmindful of the fact that basic study on fiber properties is necessary to improve cotton so that it can meet the ever-increasing demands made upon it.

The separating of fiber values in the field is the job of the cotton merchants. Paying premiums where value exists is still the best means of raising the quality standard of American cotton year by year.

In 1948 at the Spinner-Breeder Conference I suggested: "There are other fiber properties that basic research needs to define for us. Still veiled in darkness are such fiber characteristics as fatigue, resiliency, regain, friction, crimping, cohesion, flexing, and elongation— to name only a few. It is true, many of these are inherent in tests already conducted, where they are not separately recognized. For efficient end-use application, these definitions are valuable. And so they should be a prolific subject for basic research."

Recent discussions at New Orleans emphasized the need for finding measurements for some of these less tangible fiber properties. They are all correlated, yet they affect cotton spinning performance differently and in large measure.

My personal pleas are for continued research on fiber properties and for the development of instruments to guide us in our studies as cotton merchants.

OTTO GOEDECKE
Halletsville, Texas

(More letters on page 191)

Test Your TEXTILE IQ

► **Each correct answer rates 10 points. A total of 70 is passing; 80, good; 90, excellent; 100—you're a genius! Keys to answers are on page 214.**

1. American manufacturers of all types in the United States planned to spend for new plants and equipment in 1952
   a. $10,000,000,000 c. $21,175,000,000
   b. $18,779,000,000 d. $30,050,000,000
2. Mill equipment of all types performs best when
   a. run continuously c. cleaned as needed
   b. run only two shifts d. maintained regularly
3. America's newest synthetic fiber, X-51, is reportedly outstanding in
   a. abrasion resistance c. elastic recovery
   b. dyeability d. luster
4. Because of the continuous cleaning system at the Birmingham, Ala., plant of Avondale Mills, spinners can now handle about
   a. two more sides c. six more sides
   b. four more sides d. eight more sides
5. Sixty S&W B-5 machines are kept at maximum production at Griffin Hosiery Mills by running 25 Brinton ribbers
   a. 100 rpm. faster c. in tandem
   b. three shifts d. with different cams
6. Individual wool fibers are measured for diameter by means of a
   a. Fibrograph c. Arealometer
   b. Uster tester d. wedge rule
7. Rayon looms can be converted to weave spun-staple cloth by adjusting the
   a. take-up c. picking motion
   b. shedding motion d. breast beam
8. Alexander Smith, Inc., controls the amount of raw materials going into its dyeing processes by means of information obtained from a
   a. electronic microscope c. Potentiometer
   b. Dynamaster d. Spectrophotometer
9. In 1951 the United States produced cotton yarns weighing almost
   a. 5,000,000,000 lb. c. 3,000,000,000 lb.
   b. 4,000,000,000 lb. d. 2,000,000,000 lb.
10. The "MP" shuttleless loom developed in Sweden is said to run at a top speed of
    a. 240 ppm. c. 375 ppm.
    b. 300 ppm. d. 410 ppm.

$500. *IN CASH!*

Would you like to win $500 this year?

You've got an excellent chance of doing it. In TEXTILE WORLD's 1952 KINK CONTEST, the annual prize has been upped from $200 to $500. *The winner could be YOU!*

And that's not all: There are two other ways to cash in on your kinks. We pay –

$25 for the best kink EACH MONTH

And space rates for every kink accepted

Here is an opportunity to earn extra dollars. In fact, some of our regular kink contributors add considerably to their income by sending in a number of kinks every month. You might pay for a TV set, a new refrigerator, perhaps even a car – with money earned by sending in kinks. Besides that, you may win the $25 monthly prize. Or the big $500 annual prize. Maybe both!

ALL YOU HAVE TO DO IS –

Look around you at the mill. There are dozens of ideas you use every day in your work that TEXTILE WORLD's readers are interested in. All you have to do is send in these ideas as kinks.

What is a kink?

A Kink is nothing but a special way of getting around a mill problem – a short-cut method, a new gadget, or anything that makes a job easier, saves time, helps production or quality, improves safety or other working conditions, reduces waste or production costs, etc. Anything that betters mill operations!

$200 WINNER IN 1951. W. N. Poe, Talladega, Ala., smiled happily for the camera of TW's kink editor, Jim Kennedy, when he learned that his kink "Our Spindles Are Self-Oiling With This Device" had won the $200 prize for the best kink in 1951. "My kink really paid off," said Mr. Poe.

Just jot down your ideas or those you see in use at your plant. Draw a little sketch or take a picture to illustrate the idea wherever possible. Then send the kink to:

TEXTILE WORLD
201 E. Coffee St.
Greenville, S. C.

Send in your kinks now. There are always two contests going on – the $25 monthly contest and the annual contest, now worth $500 to the winner. The more kinks you send in, the more money you make and the better your chances of winning a prize.

DON'T WORRY ABOUT YOUR KINKS NOT HAVING A "FINISHED" LOOK –

We have editors to polish up your writing and artists to make finished drawings. Just give us the idea and enough details to guide our writers and artists. We'll do the rest.

Brush up those "kink" ideas now – and make 'em pay off!

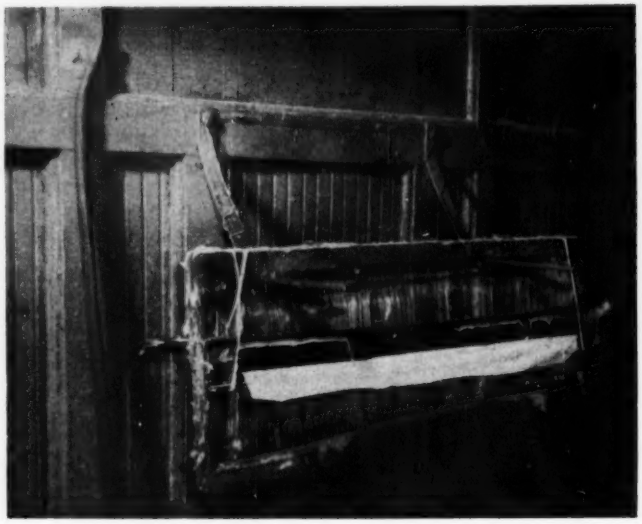
Kinks AND SHORT-CUTS

We Clean Harnesses In a Separate Room

We have partitioned off a small space in our slasher room in which we clean the weave-room patterns each time they are re-tied to a new warp.

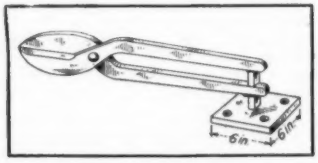
In this room we have a box on which the harness is set and blown off with compressed air. If further cleaning is needed, the harness is hung over two hangers and washed with a damp cloth or waste.

After being cleaned, the heddles are sprayed lightly with oil and the frames are waxed. This prevents rust to the heddles and preserves the enamel finish on the frames. **Oliver Smyth, Pepperell, Ala.**



IN A SEPARATE ROOM is this harness-cleaning setup. Frames can be blown and wiped off, and heddles are sprayed lightly with oil after cleaning.

It's Easy To Cut Sheet Metal Our Way



METAL PLATE 6 IN. SQUARE BY ⅜ IN. THICK is welded to a projection on a large pair of shears and screwed to a workbench. Another projection welded to the shears stops the cutting edges in the right position.

In our machine shop we used to cut sheet metal with plain shears and found that it was a tedious job; then too, our employees received a lot of small cuts on their hands even though they wore gloves.

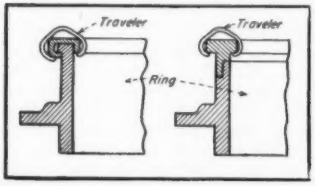
We have a new way to cut strips of thin metal that makes it easy, safe, and fast.

Two projections are welded to a large pair of sheet-metal shears. One projection is welded between the handles to hold the handles apart at the closed position of the cutting edges. The other projection, welded to the bottom of a handle on one end and to a ⅜-in. metal plate on the other end, holds the shears in an upright position.

The ⅜-in. metal plate is 6 in. square and has four holes bored in it to fasten the plate to a workbench with lag screws. The plate is moved to different positions on the workbench when various width of metal are cut.

One man can cut metal by himself since we arranged our shears this way. More metal is cut per day, and the lines are easier to follow. **William H. Mullen, Quincy, Mass.**

Why Not Redesign Rings?



RING AT THE LEFT doesn't give as good results as the one at the right might, according to this kink.

In ring spinning the traveler sometimes doesn't slide easily on the flange of the ring. The traveler, therefore, often disengages or revolves irregularly.

If the upper part of the ring were designed a little differently, these difficulties would be eliminated and we'd have better spinning.

ALSiMAG® GUIDES for WHITIN-SCHWEITER QUILL WINDERS

These AlSiMag Guides have been thoroughly proved in the winding of synthetic yarns at terrific speeds.

ADVANTAGES:

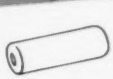
LONGER LIFE—Many mills report that these AlSiMag guides give 10 to 15 times the wear obtained from their best former guides.

LIGHTER TENSIONS—AlSiMag guides can be supplied in satin or highly polished finish.

MORE UNIFORM TENSIONS—AlSiMag guides are homogeneous and are uniform physically and dimensionally.

LESS GUIDE BREAKAGE—All AlSiMag materials are considerably stronger than ordinary ceramic guide materials. AlSiMag 513 has almost double their mechanical strength.

BETTER QUALITY YARN—Hard, homogeneous AlSiMag has no surface skin to wear through, cause undetected yarn damage. Guide wear is very gradual, simply exposes new surfaces of the same character as the original.



AlSiMag No. GU-10713-B

AlSiMag No. GE-16861

AlSiMag No. GS-24244

AlSiMag No. GE-15978

These AlSiMag Guides are available in either satin finish or highly polished finish in any of these AlSiMag materials.

ALSIMAG 192—(Considered standard). A non-conductor of electricity. Hardness of 8 on Mohs' scale. Gives exceptionally long life on most requirements. Ivory color.

ALSIMAG 193—A conductor of electricity, used for dissipating static charges. Metallic gray color. Otherwise it is identical to AlSiMag 192.

ALSIMAG 513—Super hard (9 on Mohs' scale), resistant to cracking, chipping, great mechanical strength. Its cost is justified where excessive wear is experienced or where satin finish must be maintained under severe conditions. Pink color.

TEST SAMPLES ON REQUEST

Try these AlSiMag Guides on your Whitin-Schweiter Quill Winders. You'll find that they are the best and by far the most economical.

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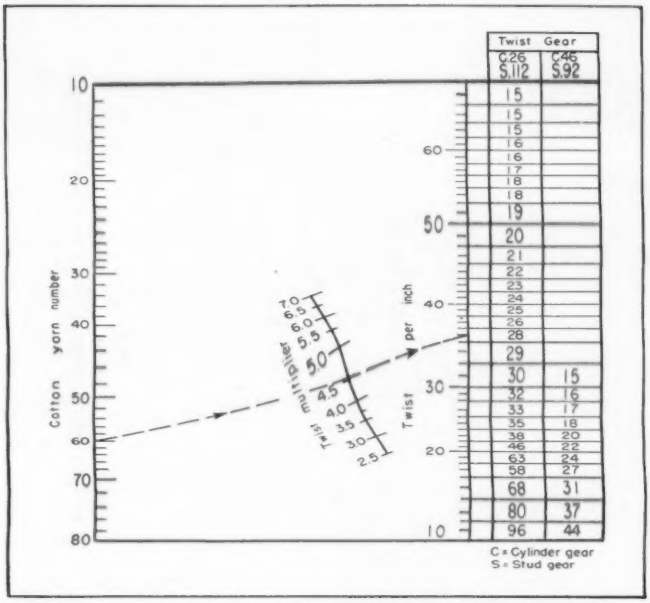
Quick Way To Find Which Twist Gear To Use



HOW TO USE THIS CHART to find out which twist gear to use. First, locate yarn number on left-hand scale. We'll call this point A. Then find your twist multiplier along the slanted line. We'll call this point B. Now take a ruler and draw a line from A to B. Extend this line to where it strikes the right-hand column, and you'll be able to read twist per inch. Just to the right of twist per inch is the correct gear to use. In this example: yarn is 60s, twist multiplier is 4.5, and t.p.i. is 35. Twist gear would be half-way between 26 and 28, or 27.

Once you copy this chart (or nomograph) you'll never have to go through messy calculations to determine which twist gear to use on a spinning or twisting frame.

Look at the chart.

Yarn numbers are listed along the left side. Notice that there isn't the same distance between 10s and 20s as there is between 70s and 80s. Keep the same proportions as shown here.

Twist multipliers from 2.5 to 7 are on the slanted line in the middle of the chart. Make your line at exactly the same angle as this one. Once again you'll notice that the divisions are not the same all the way up.

On the right side of the chart is the real "meat." Twist per inch is shown in even divisions straight along the right side. Then, in line with the t.p.i., at the far right you have the twist gear to use for each of two cylinder-and-stud-gear combinations.

Two different twist-gear combinations are given so that you can avoid the use of large twist gears for the coarser yarn numbers.

This chart can be adapted to any spinning or twisting frame. All you have to do is enter the correct twist gear for each t.p.i. in the right-hand column. You can figure the correct twist gear by dividing your frame twist constant by the t.p.i.

We save much time with this chart. **E. H. Helliwell, Newburyport, Mass.**

New Treads for Old—Stair Tower Is Like New

NO MORE WOODEN TREADS can be seen now—they're covered with cement, and the stairs look like new.

After a number of years of use, the wooden treads in our main stair tower began to show signs of wear and needed replacing or repairing.

Instead of repairing with new wood, we used a cement that could be applied over the wood and when finished gave the appearance of concrete steps.

The application of this cement was fairly simple. A metal flange was fastened by screws to the front of the treads and landings. Then a preservative was applied to the treads to prevent rotting. After this preparation, the cement was poured on the treads, given a trowel finish, and allowed to set for 24 hr. before being used.

This type of stair tower looks better than wood, is easier to maintain and clean, should last much longer, and is also a quicker and less expensive method of repairing worn stairs.

Green Blotting Paper Helps To Relieve Eye Strain

Cutters, trimmers, and examiners in our plant used to complain about eye strain. Part of the strain was to be expected from the close work that we do, but we thought that something could be done about the glare from brilliant fluorescent yarn used in some of our garments. Even with diffused lighting, we still had too much glare.

To remedy the situation, we tacked strips of soft-green blotting paper along the back of our trimming and examining tables. We also hung 19x24-in. pieces of the same paper on posts that parallel our cutting table.

This simple, inexpensive expedient has helped to improve efficiency, increase production, and make working conditions more comfortable. **S. P. Wiener, So. Norwalk, Conn.**

Here's a way for

Radical Cuts in the Production Costs of Nylons!

Here's a new system for presetting nylon hose. It is new for the industry as a whole . . . yet it has been in full-scale plant use since 1948, and eight mills are making very successful use of it today.

THE ONYX-DIP SYSTEM

In this system, nylons are dipped for 20 minutes—in bundles of 24—in a hot solution containing suitable amounts of the following Onyx compounds . . .

SORELENE G EXTRA PASTE . . . for wetting and scouring action

STEARO-GLYCERYL SULFATE N . . for softening and lubricating action

NEUTRONYX 600 . . . for emulsifying and dispersing action

After dipping, nylons are drained and dried. From this point on they are looped (if necessary), seamed, inspected and preboarded, or, if the Dunn Process is used, sent to the dye house without preboarding.

The Onyx-Dip System also offers many advantages on seamless hose.

THE ONYX • DIP SYSTEM

has thoroughly demonstrated that it will give you the following advantages in processing your nylons . . .

- Greatly Improved Uniformity of Shade
- Materially Reduced Picks and Pulls
- Maximum and Uniform Shrinkage
- More Output per Seamer
- One-Bath Dyeing
- Snug Fitting Welts
- No Sleaziness

INVESTIGATE!

Ask for the detailed story of the Onyx-Dip System.

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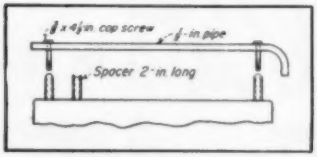
We Use a Pipe To Protect Our Loom Take-Up Rolls



THE 1½-IN. WATER PIPE is long enough to reach across the take-up roll. Two ½-in. diameter holes are bored in each end for cap screws that hold the pipe to the take-up roll stand. The pipe is bent on the drive end of the loom. Two spacers, 2 in. long, are ground on one end to fit the pipe.

PIPE IS FASTENED to the take-up stand with a 4½-in. cap screw. The spacer is between the pipe and the take-up-roll bearing cap. Notice the bent end to prevent accidents at the drive end of the loom.

Part of our W-3 looms face an open spare floor. Filling, warp, and cloth trucks used to run into the take-up rolls and damage both roll and fabric.

We made a protector to prevent further damage.

A long piece of 1-in. water pipe was used to make the protector. Two pieces of the same-size pipe were cut 2-in. long to be used as spacers. The spacers were ground on one end to fit the contour of the protector pipe.

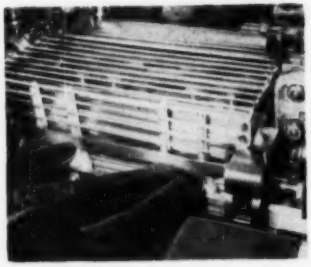
The spacers were ground before they were cut because the longer pipe was easier to hold against the grinding wheel than the 2-in. pieces.

The long pipe used for the protector pipe was bent on the drive end of the loom to prevent a sharp end from sticking out. One ⅞-in. hole was bored in each end of the protector pipe to fasten the rod to the loom.

The two top cap screws were removed from the take-up-roll bearing cap; the protector pipe was placed against the bearing cap; and a 4½-in.x⅜-in. cap screw was placed through the protector pipe, the spacer, and into the bearing. The cap screws were tightened securely with a wrench.

We placed these protector pipes on all our W-3 looms and do not have any more cut cloth or damaged take-up rolls. **Wilfrid Belair, Lachute, P. Q.**

Gill-Box Guard Covers Danger Spots



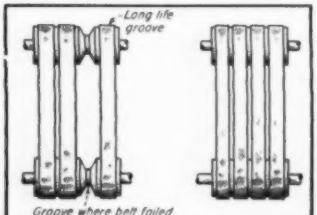
NO MASHED FINGERS HERE! Gill-box guard, made of round bar stock, is hinged at one end; but it's hard to run the machine unless the guard is in place.

Over a period of years we've had some serious accidents caused by operators getting their hands caught in the fallers of our gill boxes.

Now our accident rate on gill boxes is 'way down. We built a guard to cover the danger spots. We took some round ⅞-in. cold-rolled stock, cut it a little wider than the fallers, and welded the rods about 3 in. apart from front to back. Eyes for ⅜-in. cap screws are welded at the end to act as a hinge.

A foolproof feature of the guard is this: It is not very easy for the operator to run the machine unless the guard is in the proper position.

Which V-Belt Should You Replace?



MOVE THE LEAST-WORN BELT into the groove in which belts customarily fail, and then put a new belt in the long-life groove.

If you have a set of V-belts on a drive and one of them breaks, do you know which one to replace? You don't put the new one on in place of the old one.

Of course the best thing to do is replace the whole set. Sometimes larger-diameter sheaves and more belts are called for. But this is what you should do in an emergency.

If you find that you've got a "failure" groove and a "long-life" groove—and that's usually the case—move the long-life belt to the failure groove, and put a new belt in the long-life groove. By doing this, you'll run less chance of rapid failure of a new belt. **Power Transmission Council.**

Best-Kink Awards for March

Each month TEXTILE WORLD awards $25 to the submitter of the kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the kink appears.

The March contest resulted in a tie. The best kinks for March, according to TEXTILE WORLD reader-judges, were:

"Our Loom Smashes Were Cut in Half"
J. L. Engram, Columbus, Ga.

"Misdraws in Rayon Warp Shown by Painted Stripe"
Maurice A. Morrisseau, Quebec, Canada

Mr. Engram and Mr. Morrisseau are each being sent a check for $25 with the compliments of TEXTILE WORLD.

"I've discovered a new, better rayon sizing!"

New STA·GEL *Sizing increases efficiency on difficult rayon weaves*

Staley's new sizing makes possible new efficiency on difficult constructions . . . ends many of the troubles common to rayon weaving. While primarily compounded for use on spun rayon mixtures, it gives equally satisfactory results on combinations of spun rayon with acetate rayon, wool, cotton and other staple fibers.

Important rayon mills now using *Sta-Gel*, report these advantages:

SMOOTHER, TOUGHER SIZE—Each fiber is protected by a smoother, more rugged size. "Fuzz balls" are fewer . . . difficult constructions easier to weave than ever.

MORE STRENGTH AND BINDING POWER—*Sta-Gel* binds the wild fibers to the body of the yarn adding extra strength and weavability.

REDUCES SHEDDING—*Sta-Gel* reduces shedding appreciably in mill operation.

IMPROVED LOOM EFFICIENCY—Gives you outstanding loom efficiency on your most complicated spun rayon weaves —lower percentage of seconds.

EASIER DESIZING—*Sta-Gel* desizes perfectly by any conventional desizing method.

COSTS LESS—*Sta-Gel* goes farther, you can cut your size consumption noticeably, and get lower cost sizing for all types of weaves.

A. E. STALEY MFG. CO. • Decatur, Ill., U. S. A.

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IF YOU'RE NOT ALREADY USING *STA-GEL* — get all the facts about this new type rayon sizing. *Write today!*

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Staley's New High Efficiency Spun Rayon Sizing

Dependable Service from

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New York, N. Y.
Philadelphia, Pa.

Lift Rack Reduces Breakage at Draw Frames

SLIVER IS PULLED STRAIGHT UP NOW, and end breakage behind the draw frames has been reduced a great deal. One of these racks serves two deliveries.

In running stock just off the comber through a drawing process, we experienced difficulty in getting the stock out of the can without having excessive sliver breakage in the creel.

To reduce breakage and stoppage, we built a rack that would allow the sliver to be pulled straight up out of the can instead of being dragged over the side or top of other cans in the creel.

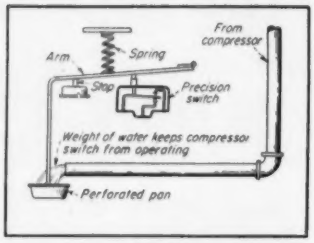
The rack was built with 3-in. channel iron, ½-in. cold-rolled steel, and 1¼in. brass pipe. The channel iron was drilled on 13-in. centers and the steel rod, cut to the proper lengths and threaded on each end, was put in these holes. The brass pipe was then cut to the proper lengths, put on these rods, and fastened into place with a cast-iron flange, which had been turned to fit about ¼ in. inside the pipe and ⅜ in. over the outside diameter of the pipe and a nut.

Each rack was built to take care of two deliveries. The sliver from the back cans runs on the inside next to the channel and so on to the front cans, which are on the outside.

A 1-in. diameter wooden peg was put on the top side of each pipe to separate the sliver from the can that it was over from those ends that were coming from cans in back of it.

These racks have eliminated all breakage in the creels caused by excessive tension, they make creeling simpler, and they allow room between every other delivery in the creel. The drawing tender can now get in between the cans when necessary. **Oliver Smyth, Pepperell, Ala.**

Water Must Be On For Compressor To Operate



CURRENT TO COMPRESSOR STAYS ON as long as there is water in the pan. No water means that the compressor can't run.

Here's how to make sure that the water is turned on before a water-cooled air compressor is started.

Hang a perforated pan just below the water-discharge pipe from the compressor. The pan hangs from a spring-supported arm that rests on the plunger of a normally open, snap-action switch. The weight of water in the pan keeps the holding circuit closed.

Should the water supply fail or be turned off, the pan drains, the switch opens, and the compressor is shut off. **Micro Tips, Minneapolis-Honeywell Regulator Co.**

$500 for Best Kink in 1952
$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know of many kinks and short-cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your kink may win the $500 check for the best kink of the year or the $25 check for the best kink of the month; maybe both!

Send in your kink now. There is always a contest going on. The more good kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the kinks in this and other issues. You will get ideas you can use as well as inspiration for kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

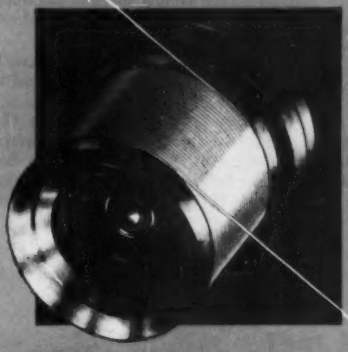
Your published kink will be judged impartially by other mill men. In case of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to kinks published that month, yearly to those published in calendar year 1952.
3. All kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred kinks in each issue. Their votes will select the best kink, and their decision will be final.

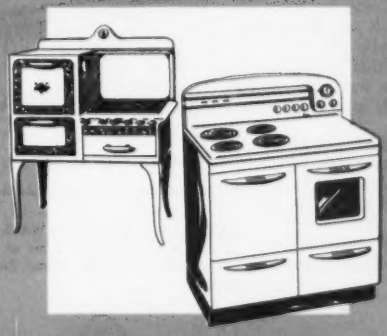
Send kinks to:

KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.



Almost everything from chapeaux to kitchen stoves has changed amazingly since fourteen years ago. Yet *one* thing born back in 1938 has refused to age with age. Yes, it's IRC's *Continuous Spinning Process*. The virtually flawless yarn it produces . . . resulting in automatic economies in fabric

as new today as the day it first appeared!



production . . . caused it to be adopted by major rayon producers throughout the world. It has set new high standards and, nearly one and one-half decades after it made its first bow, IRC's Continuous Spinning Process is still *the* process. When further rayon progress is made . . . as it will be . . . you can be sure that IRC will be leading the way.

Industrial Rayon Corporation

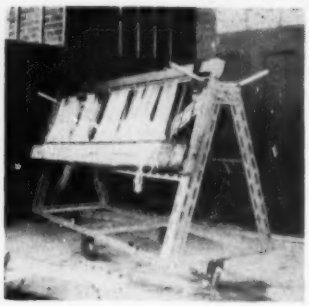
IRC

Cleveland, Ohio
Sales Office: 500 Fifth Ave. New York 18, N. Y.

Kinks AND SHORT-CUTS

Streamlined, Light Truck Cuts Reed and Harness Cost

LIGHT-GAUGE, ANGLE-IRON construction and a wide base that slopes toward the center at the top make this warp truck light, well balanced, and easy to handle.



HARNESSES AND REEDS may be carried on only one side of the truck without danger of tipping the truck over. Twenty-five harnesses can be carried on each side of the truck.

For a long time we carried our empty harnesses and reeds from the weave room to the drawing-in room on regular warp trucks. Our harnesses and reeds sometimes fell off the truck and were damaged.

We designed and built a truck especially to remove harnesses and reeds from the weave room.

The truck is made from light-gauge, slotted angle iron and weighs much less than standard trucks.

The truck is mounted on two standard casters in the center and two swivel casters at each end.

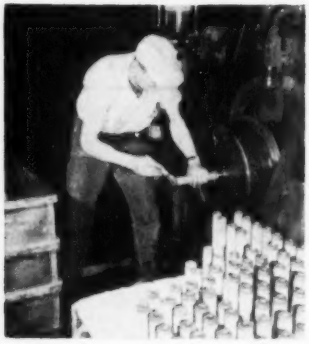
The base is just wide enough to pass through the back weave-room alleys. The upright girders slope from the base toward the top center. Two cross arms made from 1-in. pipe are bolted to the top girder to hold the harnesses.

Twenty-five harnesses can be placed on each side of the truck, or harnesses can be moved on only one side since the sloping shape of the upright shafts prevents the harnesses from tipping the truck over.

We find that the truck is easy to move and does not tend to tip over even when fully loaded.

Our replacement cost of harnesses and reeds has been lowered because the truck prevents any breakage of them. **A. K. Faurett, Huntingdon, P. Q.**

How Fast Can You Paint Roving Bobbins?



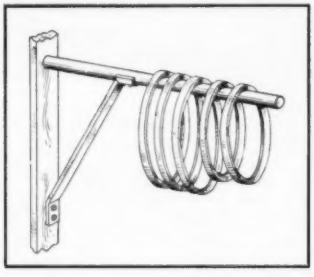
YOU'VE GOT TO BE QUICK to catch this fellow when he's painting bobbins. It's all over in a flash, and the bobbins look swell. Painting speed is increased tremendously.

From time to time we have to paint the tips of roving bobbins as a means of identifying the stock. Since we don't have sufficient painting to justify our buying a machine, we rigged up a method that is an improvement on hand painting.

On one of our cards on the end of a line we put a spindle about 8 in. long in the cylinder shaft. The diameter of the spindle was made so that it would fit snugly into the butt of the bobbin.

The bobbins are then placed on this spindle, and a paint brush is held on the tip of the bobbin as it turns. A band of the desired width can be painted in a single dab with the brush, or a whole head of the bobbin can be quickly covered with paint in a second.

Store Used V-Belts



USED V-BELTS SHOULD ALWAYS be stored so that in an emergency a set of them can be matched and used. *Power Transmission Council.*

Remove Screws With Broken Heads

Ever have trouble trying to unscrew a screw when the screw driver wouldn't hold in the slot? Many were the minutes we spent playing with the elusive screw heads until we found out how to do it.

For brass screws, just take a punch or a small chisel and make a new slot in the head. This system will not work if the metal it too hard.

For hard-metal screws, select a twist drill smaller than the screw. Use a drill sharpened in reverse so that it will cut into the screw. Mount the drill in a hand brace that can be worked left-handed, and drill the screw out by working the drill to the left. **W. E. Warner, Essex, England.**

KEEPS MILL VILLAGE INTERIORS

Beautiful... Longer

That Means Lower Maintenance Costs

Here's why! QUALI-KOTE is a *brand new,* fast-drying commercial wall paint especially developed for: (1) *Easy application;* (2) Exceptional *durability;* (3) Repeated *washing;* (4) *Lasting,* velvet-like beauty!

QUALI-KOTE cuts decorating costs by reducing application time. It comes ready to use . . . flows on smoothly and easily. It dries to touch in only one hour . . . means less inconvenience to tenants!

QUALI-KOTE *reduces cost of upkeep* because it hardens to a tough, nonporous film that actually resists dirt and wear! When QUALI-KOTE is thoroughly cured, it will withstand repeated washing . . . without disturbing its color or finish. QUALI-KOTE maintains beauty . . . *puts off* early repainting!

Let us show you QUALI-KOTE's outstanding economy features . . . its 16 authentic colors and white; features and colors that give tenants new pride in their homes . . . give you an *actual saving!*

Write The Sherwin-Williams Co., Cleveland 1, Ohio. (Division Office, Charlotte, N. C.)

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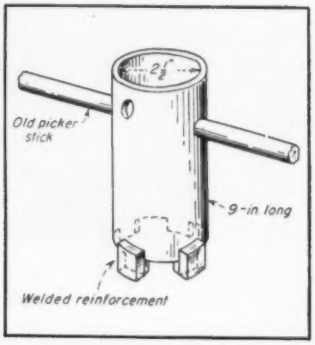
SAVE-LITE MILL WHITE • COLOR HARMONY FINISHES • MILL VILLAGE PAINTS

For more information, write direct or use Reader Service post card.

Eccentric Gears Stuck? Our Tool Turns 'Em

ECCENTRIC-GEAR SOCKET is made from a 9-in. length of 2½-in. steel pipe. Notches are cut in one end, and lengths of key steel are welded to the projections. Four 11/16-in. holes are drilled in the plain end of the pipe.



THE ECCENTRIC GEAR can be turned easily when the eccentric-gear socket is slipped over its end. An old picker stick gives leverage.

On W-3 looms we often need to change the setting of the eccentric gears when we change from one style of cloth to another. For example, we may wish to change from a slow-start, quick-finish to a medium-fast-medium.

We prefer to first set our top-and-bottom cylinder gears against the vibrator gears with the harnesses crossing at the desired position in relation to the reed-to-breastbeam distance—and then time the eccentric gears. When we do this and try to turn the eccentric gear on the shaft, we sometimes find the eccentric gear stuck and hard to move by hand.

To move the gear easily, we made a tool to slip over the setscrews at the outer end of the gear.

This eccentric-gear socket, as we call it, is made from a 9-in. length of steel pipe. The pipe is notched on one end to provide slots to go around the setscrews in the eccentric gear. 1-in. lengths of key steel are tack-welded to the projections that are left on the pipe after notches are cut.

Four ⅞-in. holes are bored in the plain end of the pipe, and an old picker rod is placed through the holes to be used as a lever to break the eccentric gear loose from the shaft.

The eccentric gear socket turns the eccentric gear to any desired position since we have plenty of purchase from the picker-rod lever. **Wilfrid Belair, Lachute, P. Q.**

We Don't Waste Travelers! Cupboard Catches Strays

HOLE IN THE TOP of this traveler-changers cupboard allows loose travelers to fall into a box below. Lower part of the cupboard is for storage.

We built a small cupboard to provide our traveler changers with a place to keep a few boxes of each number of traveler and a place to thread up the travelers.

The top of the cupboard is made of sheet metal and is shaped like a funnel. An empty traveler box catches stray travelers through a small opening cut in the bottom of the sheet-metal top. The changer, when putting travelers on his wire, holds travelers and wire over the cupboard so that any travelers he may drop will fall into the box under the opening and can be returned to their correct box later.

Inside the cupboard are shelves on which the traveler boxes can be stored until needed. The cupboard is kept locked with a regular hasp and a snap lock.

By using a cupboard of this type the traveler changer saves time and travelers, and he keeps travelers off the floor.

The only thing to remember is to replace the strays immediately. **Oliver Smyth, Pepperell, Ala.**

Now--
$500 for your Kinks
see page 157

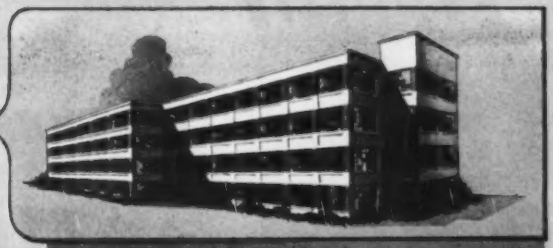
Use Broken Glass Rods

Glass rods discarded from beamers, warpers, looms, and other machinery can often be used for other purposes. When broken ends shorten the rods, the rods can often be ground down on an emery wheel and reused on similar machinery that is narrower. Some of the rods are broken in half, however, and cannot be used except as stirring rods for mixing liquids in the sizing department or for mixing chemicals for cleaning, etc.

Heavy glass rods come in handy in stirring the dye evenly in mixing fugitive tints in the bobbin-winding department as well as for other purposes.

FROM RESEARCH

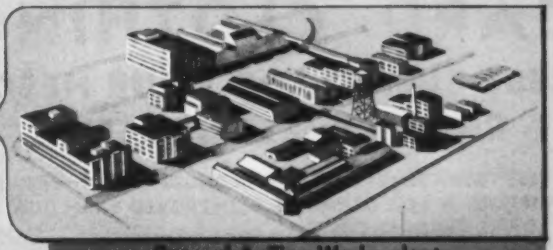
. . . laboratories such as these



Central Research Laboratory, Easton, Pa.

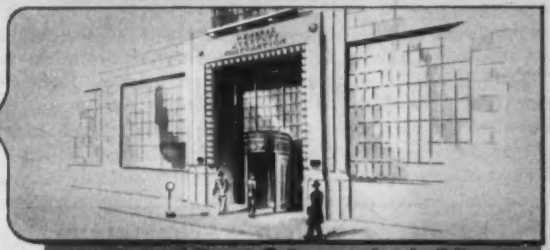
TO REALITY

. . . of production plants such as these



General Aniline Works plants at Orrville, N. J. & Rensselaer, N. Y.

. . . and sales and service facilities such as these



General Dyestuff Corporation building at 435 Hudson St., N. Y.

ANTARA CHEMICALS *are designed to solve your production problems.*
Antara offers Surfactants • Textile Chemicals
Optical Whitening Agents • Industrial Chemicals
Organic Sequestrants • Paper & Leather Chemicals
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FOR THE FINEST AND FASTEST in Dyestuffs—it's INDANTHRENE . . . Ask For It!

Booth

Originators of STRIP-O-MATIC *

CARD CLOTHING NEWS AND VIEWS

SELECT THE

STRIP-O-MATIC

CARD CLOTHING

BEST SUITED FOR YOUR NEEDS

ENJOY THESE BENEFITS

• LESS STRIPPING WASTE • LONGER RUNS BETWEEN STRIPPING • LESS GRINDING • IMPROVED YARN QUALITY • LOWER CARDING COSTS

Runs between stripping increased 60 to 500%—stripping waste reduced 50 to 200%. Nep count decreased.

You have read and heard about STRIP-O-MATIC for five years. New sizes have been announced and we show below the range of STRIP-O-MATIC gauges for your convenience. Review this chart. Select the STRIP-O-MATIC suited to your needs. Order enough for one card today and compare it with the clothing you are currently running. You will be very glad you did for you will start at once to get better carding at substantially lower cost.

RANGE OF STRIP-O-MATIC GAUGES

RJ 17/25	Extra	NE 21+/32	Med.	JA 25/36	Fine
QH 18/26	Course	MD 22+/32+	Course	HB 26/34	
PG 19+/28	Course	LC 23/33	Med.	GA 28/36	Extra
OF 21/30		KB 24+/34	Fine	GAA 29/38	Fine

You can save money, time and labor and improve yarn quality with STRIP-O-MATIC Card Clothing—the Booth Clothing that runs virtually without stripping.

OUR 60th YEAR OF SERVICE

Here are what a few of the many pleased users of STRIP-O-MATIC say:

Cuts Stripping Waste by Two-thirds reports a prominent Pennsylvania woolen manufacturer running fleece, top and synthetics.

Runs to Nine Months Without Stripping, the record achieved by a Philadelphia nylon spinner. With conventional clothing, stripping was required every two to three weeks on an eight-hour shift—weekly or oftener with two shift operation.

Color Lots Are Run Complete without stripping, report several modern carpet plants—able to run up to six weeks without stripping. With the conventional clothing that STRIP-O-MATIC replaced, stripping was necessary every day or two.

Savings Up To $1,000 Per Year by eliminating waste stock in stripping from a STRIP-O-MATIC equipped breaker card, are reported by a prominent Canadian Mill.

Performance Record. A finished card with conventional clothing ran 24 hours—stripped 2 lbs. waste. A finisher with STRIP-O-MATIC ran twelve days (24 hours per day)—stripped 6 oz. Carding was excellent, good web, no fiber damage—saving $170 on one finisher in 12 days.

Typical User Comments: Less Fly, Greater Strength, Greater Production, Less Shrinkage, Better Quality, Stripping is Easier; Working well on 70 wool.

Try STRIP-O-MATIC and we feel certain that you will be equally pleased with the results. We will provide full information and study your carding problems without obligation.

Sincerely yours,

E. Allen Draper Jr.

PRESIDENT

Booth

BENJAMIN BOOTH CO., ALLEGHENY AVE. & JANNEY ST., PHILA. 34, PA.

Free Technical Information

Reader Service

MILL EXECUTIVES may obtain free for the asking . . .

. . . OUTSTANDING TRADE LITERATURE reviewed on the next and following pages

. . . FURTHER INFORMATION on
New Textile Equipment
New Dyes & Chemicals
New Useful Accessories
Editorial Articles
and the Advertisements

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. . . to send a Kink, a letter for Round Table, or a news note.

. . . to comment on anything appearing in this issue.

. . . to query the editors about any manuscripts you might wish to submit to them.

. . . to send an inquiry to the Questions & Answers department.

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. . . to request copies of trade literature described on the next and following pages or to get more information on New Useful Accessories described in this issue.

Dear Editor — MAY, 1952

Please send me additional information on the following:

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Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for May are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

The lint cotton opener, the new opening machine developed at Southern Regional Research Laboratory, is described in a folder prepared by Cen-Tennial Cotton Gin Co. The machine opens, blends, fluffs, and cleans—all in one operation. Read the feature article on it elsewhere in this issue, and then send for **(F-1)**

A single-cylinder waste machine that requires only half the floor space formerly needed is the subject of a booklet issued by Kirkman & Dixon. The machine is also said to use only half as much power and to have eliminated two-thirds of the gearing of ordinary waste machines. **(F-2)**

Homogenizers. A new booklet has been prepared by Manton-Gaulin Mfg. Co., Inc. Applications of the homogenizer to finishing as well as slashing are discussed. **(F-3)**

An ultra-clean cloth room at Springs Cotton Mills, Lancaster, S. C., is the feature of a folder published by Herman Machine Co. Another part of the folder tells how a mill shears 300 yd. per min. on two machines. **(F-4)**

Precise mechanical guiders of stainless steel are described in a bulletin made available to TW readers by Mount Hope Machinery Co. A section entitled "How It Works" shows at a glance the principle of guiding by a pair of nip rolls. **(F-5)**

Machinery available for immediate delivery is listed in a folder from Industrial Products of America. Finishing machinery makes up most of the present list. **(F-6)**

Spinning machinery — from openers through twisters—is shown in a folder published by the new American Rieter Co. The line of machinery is for cotton, wool, worsted, and synthetic yarns. **(F-7)**

Your guide to lower twisting costs—in a nutshell—is the theme of a folder prepared by Haskell-Dawes Machine Co., Inc. Among the items mentioned are twisters, ropers, layers, bunchers, creels, and wet-twisting tank units. **(F-8)**

AUXILIARY EQUIPMENT

A cloth-bag dust collector that may have textile applications is described in a bulletin issued by Pangborn Corp. To find out if this new product can help you solve some of your lint and fly problems, fill out the Reader Service postcard and ask for **(F-9)**

Do you know how the stroboscope works? You can find out by reading a bulletin published by General Radio Co. Specific applications of four special instruments are included. And even the prices are given. **(F-10)**

V-belts that feature more grip and less slip are described in a bulletin made available by Raybestos-Manhattan, Inc. The belts have straight sidewalls and straight-in-line cords in the strength member. **(F-11)**

Polyphase squirrel-cage induction motors—both integral and fractional horsepower—are described in a folder issued by Diehl Mfg. Co. There's a full page of dimensions of the various models. **(F-12)**

Motors, generators, and electrical equipment made by Marathon Electric Mfg. Corp. is presented in a booklet from that company. Five types of enclosures are shown. **(F-13)**

A measuring machine for ribbons and tapes is the subject of a bulletin issued by Trumeter Co. The machine has adjustable guides for different widths of material. **(F-14)**

Miniature speed changers, designed for applications where the backlash between high- and low-speed shafts must be zero or a very low value, are described in a data sheet issued by Metron Instrument Co. **(F-15)**

As hot as some temperatures are getting these days, you may be interested in means to measure high temperatures. The pyrometers described in a recent bulletin from Minneapolis-Honeywell Regulator Co. can take care of temperatures up to 7,000°F. **(F-16)**

SUPPLIES AND CHEMICALS

Handling chlorine? A new booklet on the properties, transportation, and handling of chlorine has been prepared by Allied Chemical & Dye Corp. The booklet also tells how to get a free wall chart "What To Do in Case of a Chlorine Accident." **(F-17)**

Modification of wool with peroxygen compounds is discussed in a bulletin

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Reader Service (Continued)

prepared by Buffalo Electro-Chemical Co., Inc. Hydrogen peroxide, for instance, now replaces mercury in the "carroting" of wool. Three other uses are described in detail. **(F-18)**

"Esters" is the title of a new booklet published by Carbide & Carbon Chemical Co. More than 30 esters are described. Solubility of various resins in some of the esters, as well as their performance in nitrocellulose lacquers, is included. **(F-19)**

Oilers and supply cans for textile mills are described in a booklet prepared by Gem Mfg. Corp. There's a complete line of pump and pistol oilers for hard-to-reach holes. **(F-20)**

Simplification of 54 cleaning tasks is the aim of a recent publication of Oakite Products, Inc. We'll bet that you can find at least two applications that will interest you. **(F-21)**

Soaps, germicides, disinfectants, and cleaners are described in a series of leaflets made available by Carolina Detergents, Inc. Their pine-oil disinfectant is used in a 1-to-50 ratio with water. **(F-22)**

The story behind Alsimag ceramics is given in a big catalog prepared by American Lava Corp. Titled "50 Years of Progress," the catalog is a camera trip through the plant and shows how the famous ceramics are made. **(F-23)**

"Dresinate"—a series of sodium and potassium salts—is the subject of a booklet issued by Hercules Powder Co. The product is used, among other ways, as an emulsifier in textile oil emulsions. **(F-24)**

Free hosiery envelopes to illustrate what the company has to offer are available from E. W. Twitchell, Inc. Both regular-stock and specially printed envelopes are included. **(F-25)**

Drop wires for all types of stop motions are described in a flyer from E. Frolich Ltd. Pictures indicate that rectangular eyelets cause less balling-up than round eyelets do. **(F-26)**

ENGINEERING AND MAINTENANCE

Take the guessing out of greasing! That's the advice given in a folder put out by A. L. Watson Co. If you use their automatic lubricators, you'll have a little grease gun on every bearing, and you can tell at a glance if the grease cup needs filling. **(F-27)**

More dope on Gradumatic humidification is given in the latest issue of *Parks Parables*. The booklet takes you inside several mills and shows lots of weave rooms. There's also a description of the latest instrumentation for a guaranteed textile-mill climate. **(F-28)**

"Leading in Lighting" that's the claim of the South's only lighting-fixture plant that manufactures and fabricates its own materials, Lithonia Lighting Products Co., Inc. The story of their operation and complete descriptions of their products are included in a big brochure they've prepared for you. All you have to do is ask for **F-29** on the Reader Service postcard.

Lubrication. Perhaps the best summary of textile lubrication since TEXTILE WORLD'S famous documentary on the subject (now reprinted and available) is in the current issue of *Lubrication*, put out by The Texas Co. The treatment just can't be reviewed in a few sentences —it's that good. **(F-30)**

Production is up 10.5% and mending costs are down 39.6% at Uxbridge Worsted Co., Macon, Ga.—all because of a new lighting system, described in a bulletin published by General Electric Co. The booklet contains ten ideas that have worked for one manufacturer or another. **(F-31)**

Are your floors fireproof? They can be made so overnight with a new process described in a bulletin issued by The Monroe Co., Inc. Known as Saf-T-Floor,

you can lose plenty if you're

UNDER-TRAPPED

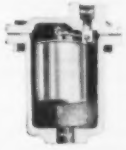
It doesn't pay to skimp on traps . . . especially steam traps. Water and air in steam lines reduces effective temperatures, wastes fuel and adds to maintenance costs.

Clark Steam Traps have proven their outstanding drainage efficiency over many years of use in thousands of plants. Now, with the new Duo-Step double-drainage capacity feature, they can handle twice the condensate of ordinary traps.

It will pay you to see your Clark representative or write us for further information.

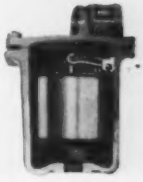
QUICK CLEANING STRAINERS. Remove dirt, scale and grit from steam, fluid and gas lines. Sizes ½" to 3" I.P.S.

SERIES "60" INVERTED BUCKET TRAP. Choice of horizontal or vertical inlet or outlet. For pressures up to 150 P.S.I. "Clark-loy" guided disc and seat.



CLARK "701" - D (DUO-STEP) TRAP. A forged steel trap for pressures up to 500 P.S.I. and temperatures of 750°F. Equipped with "double-drainage" Duo-Step leverage and venting, Clark-loy seats and discs. Pipe sizes ½" or ¾".

SERIES "80"-D (DUO-STEP) TRAPS. Cast semi-steel construction for pressures up to 250 P.S.I. and temperatures to 450°F. Equipped with Duo-Step Leverage and Venting, Clark-loy seats and discs. Pipe sizes from ½" to 2".



THE CLARK MANUFACTURING CO.
1830 EAST 38th STREET • CLEVELAND 14, OHIO

Clark
THE HOME OF DUO STEP LEVERAGE

The complete line of dependable fluid controls

Experience Proves Their Value!

MOBILIFT Stand-Up FORK LIFT TRUCKS

...More Maneuverable
...Quicker
...They Do More Work

Across the nation industries agree that MOBILIFT'S 15 years experience in building and improving STAND-UP fork lift trucks assures an efficient, hard-working truck . . . speedy and maneuverable in tight places.

Operators prefer MOBILIFT'S unobstructed visibility . . . easy, less fatiguing handling . . . safety.

Whether you need a 2,000-lb. capacity fork truck with 63" mast for loading and unloading trucks, or a 3,500-pounder with 72" mast and 110" lift for your warehouse . . . a MOBILIFT *Stand-Up* model will do your job quicker, safer, and at less cost.

Unequalled maneuverability . . . short turning radius . . . unobstructed forward-backward visibility . . . grouped push-pull, positive action controls . . . safe "deadman" brake . . . these and other *exclusive* features make MOBILIFT *Stand-Up* models equally fast and efficient in crowded or roomy work areas.

Lev-R-Matic DRIVE

Lev-R-Matic, grouped 2-way PUSH-PULL levers give instant, finger-tip control . . . forward, back, elevating, and tilting. MOBILIFT multiple disc clutch insures smooth, positive action . . . THERE ARE NO GEARS TO SHIFT!

Mobil-Chain Lift . . . Controlled power, roller-chain-operated lift allows unobstructed view between uprights.

MOBILIFT'S 3-cylinder heavy duty engine is air-cooled, compact, well-balanced and operates smoothly for long trouble-free service.

STAND-UP MODELS IN 2,000, 2,500, 3,000 and 3,500-POUND CAPACITIES are available with 63", 72" and 83" MASTS.
(Special Mast Heights to Order.)

WRITE TODAY FOR COMPLETE SPECIFICATIONS

MOBILIFT with Lev-R-Matic DRIVE

MOBILIFT CORPORATION

835 S. E. MAIN ST., PORTLAND 14, OREGON
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2730 San Pablo Ave., BERKELEY

Reader Service (Continued)

the material can be applied over any solid wood or concrete floor and hardens to form a stone-like surface. **(F-32)**

Plant engineers will be interested in an indicating and recording flue-gas analyzer described in a data sheet made available by Minneapolis-Honeywell Regulator Co. The Davis analyzer is available for either single or two-point analysis and can be supplied with either a circular or strip-chart recorder. **(F-33)**

A motor switch that made 3-million starts and stops is shown in a folder from Wagner Electric Corp. The capacitor-start motor that is described is especially good for applications requiring high starting torques. **(F-34)**

What wears out your floors? If it's acids, alkalies, foods, oils, water, steam, or just plain heavy traffic, you may get some ideas from a bulletin published by The U. S. Stoneware Co. The corrosion-resistant brick floor that they recommend has four components—subfloor, membrane, acid brick, and jointing compound. **(F-35)**

An improved water softener that gives up to 44% greater capacity and guards against costly loss of Zeolite is described in a bulletin recently issued by Elgin Softener Corp. The bulletin also tells how to make any water softener deliver from 3 to 10 times more soft water. **(F-36)**

Power Sweepers that are said to reduce sweeping costs as much as 75% are presented in a booklet published by Wilshire Power Sweeper Co. Enough information is given so that you can select the size and model that best fit your requirements. **(F-37)**

Antifriction bearings. If you have any antifriction bearings, you ought to have the annual report on bearing maintenance put out by the Antifriction Bearing Distributors Assn. The report is a down-to-earth guide that contains lots of helpful hints. **(F-38)**

Better air conditioning and ventilation through controlled air diffusion with their adjustable air diffuser is described in a catalog issued by W. B. Connor Engineering Corp. You can control both air volume and air direction on the diffusers, even after they're installed. **(F-39)**

Wire-stitching techniques and other phases of materials handling are covered in a recent publication of Acme Steel Co. One article tells how a manufacturer devised a palletless pallet load. **(F-40)**

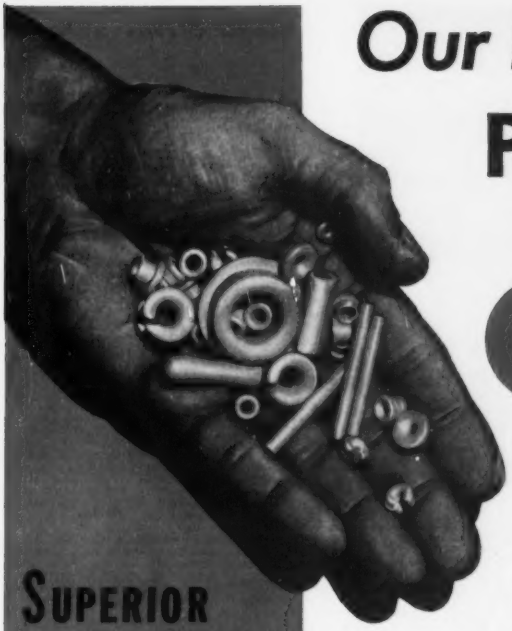
To help stainless-steel users quickly identify various types of stainless steel, The Carpenter Steel Co. has prepared a segregation chart that is now available to TW readers. The chart outlines 11 different tests. **(F-41)**

The critical seeing task of cotton classing is discussed in a recent publication of General Electric Co. Several examples of excellent installations are pictured. **(F-42)**

An asbestos-aluminum coating for roofs is described in a leaflet issued by Paramount Industrial Products Co. Advantages listed for the product are: lower under-roof temperatures, longer life, lower maintenance costs, and increased efficiency of air-conditioning systems. **(F-43)**

GENERAL

Plastics. There are two new booklets available on this red-hot subject. The first booklet, from Toscony Fabrics, Inc., tells the story of Vinylite plastic film and sheeting and how the "fabrics" are made and sewed or heat-sealed. You can get the Toscony book by sending for **F-44** The second booklet, from The Richardson Co., deals with laminated plastics and their application in industry. The particular product described, Insurok, is lighter than aluminum but harder than ebony. You can get this booklet by requesting **F-45.** If you want



Our Helping Hand

PAGE MADDEN

ANNOUNCE

PAMACO

FOR LONGER LASTING AND BETTER WEARING QUALITIES

SUPERIOR PORCELAIN

PAMACO, the trade name of our company, denotes superiority in quality and endurance under the most adverse conditions. In anticipation of the requirements which were certain to come for thread guides of increased life and higher quality, Page-Madden Company, began development of unglazed porcelain guides years in advance of demand.

These requirements are met in the new compositions, **PAMACO-175** and **PAMACO-200. PAMACO-175** has been tested exhaustively and found to be of superior quality in every respect to the older guides of glazed porcelain, glass and metal. This is the guide you will want where problems of guide wear have come up.

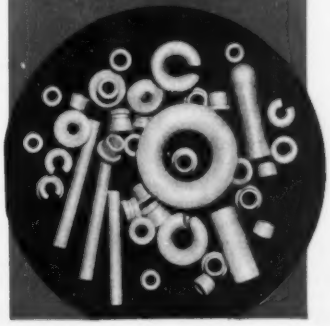
For those spots in which extreme wear conditions exist, the answer is the **PAMACO-200** composition, which has a hardness of 9 on the Moh's scale, the only thing harder being diamond.

The slight increase in cost of these two compositions is amortized very shortly from the savings in decreased down-time alone, not to mention the unbelievable increase in guide life.

Due to forming methods required in producing **PAMACO-175** and **200,** some of the old, more complex guide designs have had to be simplified which also passes a saving along to the purchaser.

Our Engineering Staff welcomes the opportunity to assist you on any guide problem you may have whether it be a contemplated design, a change of an old design or a general problem in which guides play a part.

We also manufacture **a full line of glass, chrome plated, case-hardened, and porcelain enamelled guides for every textile application.**



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Reader Service (Continued)

both of these new publications on plastics, ask for **P-44** and **P-45.**

How's your copying done? If you want to get caught up on two of the latest methods, here's your chance. Two brand-new booklets on this subject have just been made available. The first, from Remington Rand Inc, describes the Portograph unit, a fast, inexpensive way to make copies of records, drawings, engineering plans, and other important documents. Send for **P-46.** The second publication, put out by Charles Bruning Co., Inc., describes the Copyflex process —a quick, clean, and odorless method for making copies of practically anything drawn, written, typed or printed. You can get this one by asking for **P-47.**

Do you know what your employees think? About jobs, pay, and about you? You can find out with an employee inventory, a special questionnaire described in a brochure issued by Science Research Associates, Inc. The system was prepared by the University of Chicago. **(P-48)**

"How to Pack War Materials In Corrugated Shipping Boxes" is the title of a booklet now available from The Hinde & Dausch Paper Co. When stuff can't be marked "Handle With Care", sturdy packaging takes over. **(P-49)**

The problem of static in the textile industry is treated at length in a technical paper made available by the John Hewson Co. Various methods of attacking the problems are discussed, and specific recommendations are made. **(P-50)**

Questions AND Answers

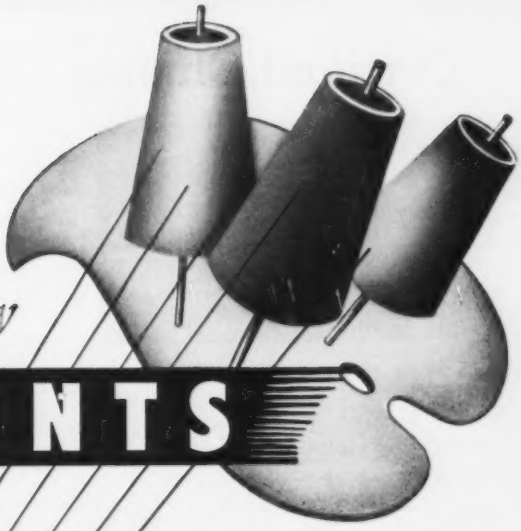
It's Often Best To Build Your Own Dye-Beam Truck

Technical Editor:

Is there a truck built to carry dye beams in a vertical position? (9518)

Most mills build their own trucks to transport beams from the dyeing machine to the dryer. The best practice is to carry the beams in a vertical position, and any mill can easily construct a truck to suit its own requirements. Probably the reason there is no truck for this purpose on the market is that beam sizes, head shapes, and other local factors make it difficult to standardize on a suitable truck that could be widely used by different mills.

A truck designed to carry beams in a vertical position can be made by first constructing a wooden platform. The platform should be offset to fit the contour of the beam head and to hold the upright beam in such a manner as to prevent it from toppling over. Four



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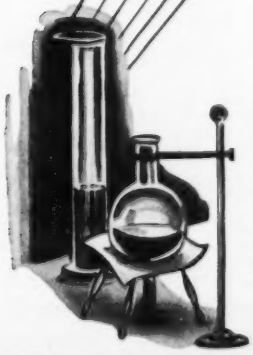

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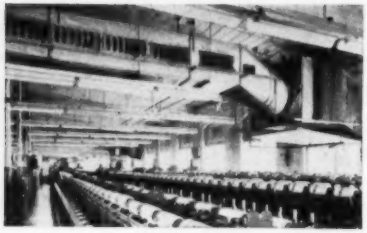

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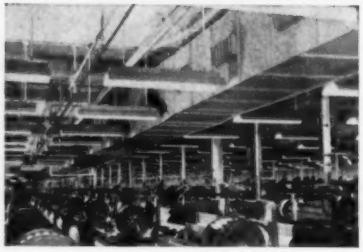

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Questions and Answers

(Continued)

swiveled roller-bearing wheels can be attached to this platform so that the truck can be maneuvered into any position. A yoke can be fastened to the platform on one side and a hook on the other, if the beams need be conveyed in a train by a transporter. If the trucks are to be moved manually, an arm can be attached to one side.

California Cotton Has Wider Applications

Technical Editor:

1. For what types of fabric is California Acala cotton particularly adaptable?

2. Is Acala cotton a good fiber for the manufacture of heavy goods such as ducking, denims, etc.?

3. Does it dye well?

4. Is it a good fiber for the softer types of material such as flannels, toweling, etc.? (9520)

California Acala cotton is a good fiber for heavier goods, but it is perhaps a question of price that limits use of this fiber. The better qualities of California Acala are probably too good for some heavy constructions. Print cloths, broadcloths, and sheetings are uses for which this cotton is particularly adaptable. Of course, you realize that specific uses depend on grade, staple, and character of each year's crop.

We believe that it is reasonable to assume that California Acala could be used for flannels, toweling, etc. in cases where the price is competitive.

Some mills have had trouble with dyeing where irrigated and rain-grown cottons have been mixed. However, we understand that irrigated cotton has performed very satisfactorily in dyeing when dyeing procedures are adjusted to it and where the irrigated cotton is used exclusively.

What It Costs To Bleach a Yard of Cloth

Technical Editor:

How much does it cost, on the average, to bleach a yard of cloth? (9528)

Based on the latest available data, here are the costs for labor and chemicals in both the chlorine and peroxide processes:

Bleaching Costs in Cents Per Lb.

	Chlorine	Peroxide
Chemicals	0.5 to 0.8	0.75 to 1.5
Labor	1.5 to 3.0	0.40 to 1.0
Total	2.0 to 3.8	1.15 to 2.5

So we can say that an average figure for chlorine bleaching is about 3¢ per lb—for peroxide bleaching a lit-

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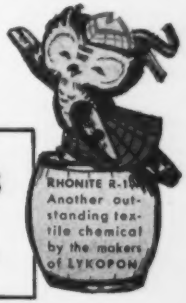

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A NEW REFLECTANCE ACCESSORY that simplifies color evaluation

To further increase the wide range versatility of the well-known Beckman Model B Spectrophotometer, a new Reflectance Accessory is now available for use on opaque, colored samples in solid, liquid or powder form. There are many useful applications for this accessory in the precise evaluation and comparison of color intensities and hues.

For example, diffuse reflectance measurements are useful for accurately controlling the whiteness of talc . . . for controlling artificial coloring of foodstuffs such as butter, catsup, and condensed milk . . . for calculation of dye bath recipes in textile processing . . . for grading the color of paper and the whiteness of flour . . . for matching and controlling shades of powder, rouge and lipstick, paints and inks and many other products where accurate color measurements are essential.

SEND FOR NEW BULLETIN

Important features of this new Reflectance Accessory are outlined at right. A bulletin describing the unit in greater detail will gladly be sent. Ask your nearest Beckman Instrument dealer for Bulletin #235—or write direct!

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To permit utmost measurement precision, a detent mechanism operated by a convenient push button in the sample tray knob exactly reproduces forward and backward position of the sliding sample tray. The resulting precision is particularly valuable for accurate measurements on samples with rough surfaces or non-homogenous colors.

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Special provision has been made so that liquid samples can be conveniently inserted without spilling . . . powdered samples without disturbing the smoothed surface.

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Sample size is approximately 1" x 1 1/4" with a maximum thickness of 5/16"—ample for most applications. Or, by simply rotating the sphere 180° in its holder, larger samples can easily be accommodated.

Quick, Easy Readings

Accurate color measurements are made with great speed and simplicity. First the instrument is adjusted to read 100% reflectance on a white standard (such as MgO), the sample is moved into position and the percent reflectance (compared to the standard) is then read directly from the meter. It's as simple as that—and the three-compartment sample tray permits quick comparison of two samples and a standard on each run.

Questions and Answers

(Continued)

tle less than 2¢ per lb. Of course, you realize that these figures are only approximate and depend on the weight of goods and the whiteness desired. Labor costs also vary from plant to plant.

Seven Answers To Full-Fashioned Query

Technical Editor:

Here are a few questions that occurred to us after reading H. B. Le Feaux's article on 60-gauge knitting machines in your Dec., 1951, issue:

1. Did he use a grease-proof heating coil?
2. What was the diameter of the heater cord?
3. Why can't a 220-v. supply be used?
4. Who makes the heating coil?
5. What type and model of heater and thermostat were used?
6. How long does it take to reach operating temperature?
7. Is there any unpleasant odor associated with the heater when oil or grease comes in contact with it? If so, how is the odor eliminated? (9521)

We'll try to answer your questions in the same order you asked them.

1. No heating coil was used. A lead-covered cable serves as the heating element and runs the entire length of the machine.

2. The lead-covered cable is of ¼-in. diameter.

3. A 220-v. supply heats the cable too fast, and the thermostat works better on 110-v. supply anyway.

4. The cable used by Mr. LeFeaux was made by General Electric.

5. The thermostat was made by Minneapolis-Honeywell Co.

6. The length of time to reach operating temperature depends on the length of time the machine was shut down and also on the room temperature. The thermostat is sensitive to a 1° change and controls the temperature quite closely.

7. The heating cable does not get hot enough to cause oil or grease to warm up and give off any odor.

Over 20 mills are using this heating cable now, and it is giving very satisfactory results.

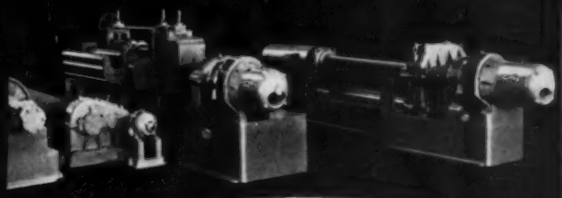
For Sewing Thread, the Trend Is to Package Dyeing

Technical Editor:

Are cotton sewing-thread yarns preferably dyed on beams or bobbins? What are the advantages of each method?

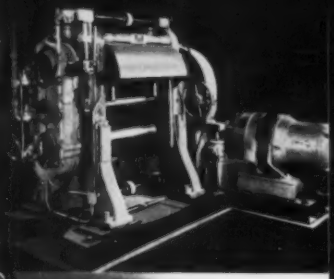
Who makes the beam-producing machines for this work? (9519)

As far as we know, no one is dyeing sewing thread on beams. All thread



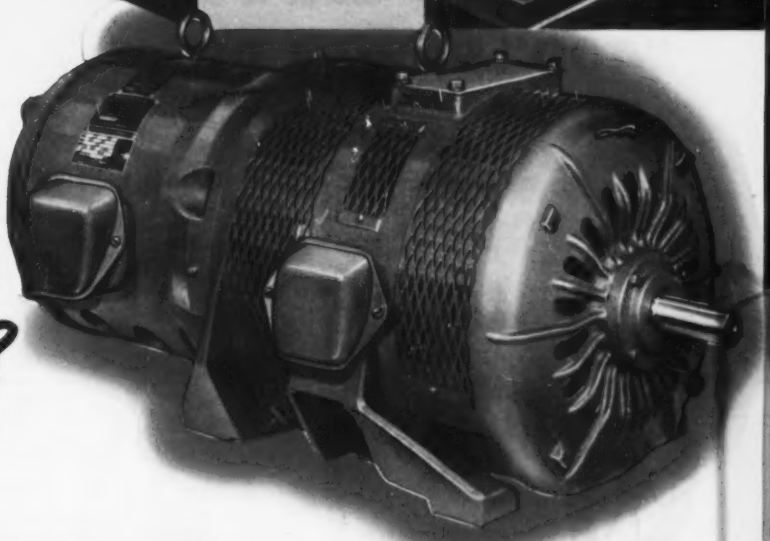
Ajusto-Spedes are used on the slitting and rewinding line in the metal fabricating industry.

Here, Ajusto-Spede is used on special calender roll in the rubber industry.



Need stepless adjustable speeds with A.C. power?

Here's your answer



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Ajusto-Spede gives you a complete, packaged A.C. adjustable speed drive — 1 to 75 HP. To help you meet your specific design needs, it provides:

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3. Compactness! Installation is simple — often the complete drive can be mounted on or inside the driven machine. Small electronic control panel and pushbutton station can be mounted at any convenient location.

Typical Ajusto-Spede applications include printing presses, extruders, mixers, ironers, calender rolls, punch presses, etc. Investigate the advantages of applying Ajusto-Spede to *your* particular problem. Write for complete information or contact the Louis Allis District Office nearest you.

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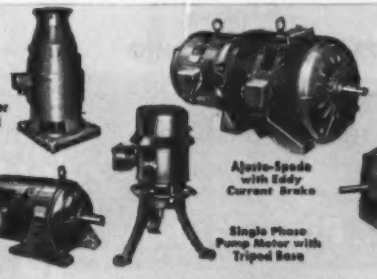

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Power for hand threaders, cutters, reamers now easily rolled where you need it!

★ *One man* can easily wheel-barrow this popular RIDGID power unit close to the work—think of the time and muscle saving!

★ And it stands still and delivers plenty of power—universal motor, forward, reverse, ⅛" to 2"—to 12" with geared tools.

★ RIDGID design 3-jaw chuck, 6 adjusting pinions, one always handy; self-centering workholder in rear.

★ Sealed-in lubrication—no oil to spill.

★ See it, compare it—buy the unequalled "400" at your Supply House!

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Work-Saver Pipe Tools

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yarns are either dyed in skein or package form.

In earlier years, most sewing threads were dyed in skeins on a Smith-Drum or a Buhlman machine. On this machine the partially immersed skeins are moved through the dyebath by a rotating reel or arm with an eccentric motion. Bleaching was, and still is, often carried out in a pressure kier by tying skeins together to form a long chain or rope. While skein dyeing is still being done, many manufacturers of sewing thread have gone to package dyeing. Packages weighing 1¼ to 1½ lb. lend themselves to more economical processing, winding, handling, and storing.

All types of dyes may be successfully applied to cotton yarn on packages except in the case of certain plied yarns. Such yarns are more successfully dyed as singles on packages and later twisted, or the yarns are dyed in skeins after twisting.

Since many sewing threads are now made of synthetic fibers such as nylon and Orlon, which usually dye better at high temperatures with most types of dyes, the package-dyeing machine offers several advantages.

On modern package machines high temperatures and pressures are possible so that dyes that would not penetrate or level at normal atmospheric temperatures can be successfully applied to these synthetic fibers.

Package dyeing also offers savings over skein dyeing in the quantity of chemicals and dyes consumed. In addition, less labor is required; and, since the yarn is handled less, a more uniform and better product is obtained.

Old Silk Terms Are No Longer Applicable

Technical Editor:

What is the difference between douppione and shantung silk?

The traditional distinction between shantung and douppione silk no longer applies. Virtually all of the so-called shantung fabrics now offered in this market are in fact made of douppione silk. When used in this way, shantung becomes a term denoting principally the rough, nubby, uneven texture seen in many fabrics today. As a matter of fact, shantung would not even have to be made of douppione; it could be made of any spun fibers, natural or synthetic.

Originally, shantung silk was a type of silk fabric woven in the province of Shantung, China, and sometimes

What's your line?

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These and other Monsanto sodium phosphates all meet the high standards of quality you would expect from the world's largest phosphate-producing facilities.

More, these products are backed by Monsanto's well-known and highly regarded customer service. Shipments are prompt. Quality controls are of the strictest. Uniformity is a byword . . . satisfaction the watchword.

Other Monsanto products—such as the Santomerses and the Steroxes—are used extensively in many textile finishing operations.

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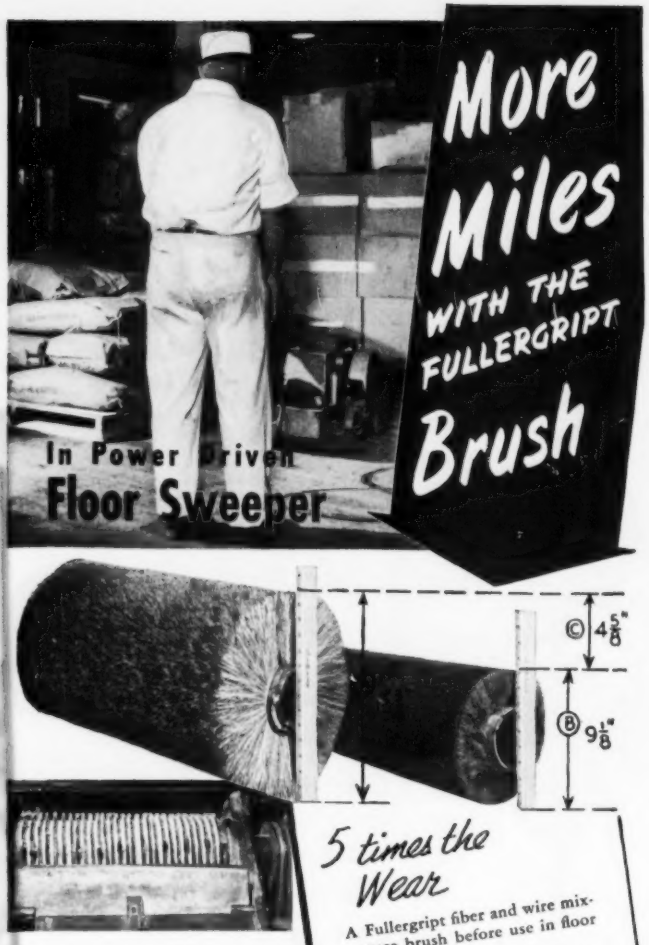

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A Fullergript fiber and wire mixture brush before use in floor sweeper.

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C Note that although brush has worn down 4 5/8", there is no evidence of material shedding, loose backing or warping.

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used generically to cover a number of similar Chinese fabrics such as pongee, honan, etc. These fabrics were made of "tussah" or wild silk. Tussah is a rough fiber, yellowish brown in color.

Cultivated silk is produced principally in Japan and Italy now. It is a much finer and evener fiber than tussah, and it is produced by carefully bred and cultivated silk worms fed on the leaves of the mulberry tree.

It often happens, however, that two of the silk worms in spinning their cocoons will spin themselves together. The delicate filaments of silk that form the cocoon are thus knotted and slubbed. From this silk, a knotted yarn is obtained—and this yarn is called douppione, derived from the Italian word "doppio," meaning double. It is this yarn that is traditionally used for the weaving of douppione silk with its typically uneven texture.

Put Electric Elements In Blankets After Weaving

Technical Editor:
How are electric blankets and sheets woven? Specifically, we'd like to know how the electric element is introduced, what type it is, etc. (9517)

Generally, the heating elements are sewed to the fabric after it is woven. The heating elements are often in the shape of flattened wires or metal tapes covered with a flexible material that will insulate the wire and be resistant to dry-cleaning fluids and to water. Natural rubber, therefore, is not used for this covering.

In electric sheets and blankets the heating element is between two layers of either a conventionally woven product or one with occasional interlacings. In electric comforters, however, the heating element is sewn into a piece of stiffened gauze that is loosely inserted in the comforter.

Mill Has Its Own Gin

Technical Editor:
Is there any cotton mill ginning its own cotton?
If so, how is the cotton weighed and sent to the picker room? (9522)

Here's how one mill operates an eight-stand gin in the mill yard not far from the cotton warehouse.

The gin is operated in just about the same way as a commercial gin. The growers bring cotton to the mill's gin, where it is processed and sampled in the conventional way. If the sample is approved, the mill buys the cotton and the bale becomes part of the mill stock. There is no attempt to run the gin to feed directly to the regular opening line.

For more information, write direct or use Reader Service post card.

EXTRA

Knitting News

EXTRA

NEWEST! PATENTED! SUPREME LRP KNITS STRIKING, NEW AIR-COOLED FABRICS

...Supreme LRP *vent-knit*... ...n-cooled cloth th... ...nique. It knits patterns ... strong, ... Model ...

LATEST SUPREME DEVELOPMENT —MODEL LRP—PRODUCES

A NEW FABRIC WITH SUPER SALES APPEAL

The Model LRP is the latest member of the Supreme family of high speed, circular jersey and rib knitting machines. Write for information on the entire Supreme line.

Supreme announces an amazing, new summer wear and underwear sales-knitter, the Model LRP.

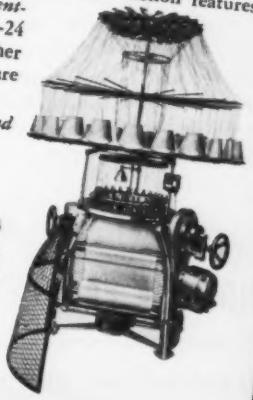
It knits patterns of air . . . produces wonderful, decoratively cool fabrics by placing open-stitched areas in a plain jersey background. These open, *vent-knitted* areas are large, sharply-defined patterns capable of wide variations in design.

The *vent-knit* pattern is a firmly constructed latticework of stitches with scores of openings or air vents to let heat out and coolness in. The breeze-cooled comfort and beautiful effects give the cloth super sales appeal.

Ventilated Yet Full-Bodied, Run Resistant and Shape Retaining—With a unique arrangement of cams, sinkers and pattern wheels the LRP *vent-knits* pattern-cooled cloth that is strong, full bodied, run resistant and lastingly elastic. Combination rayon and cotton or other mixed yarns can be used to produce many startling fabric variations.

Dollar-Reaping Production Rates — The new Supreme LRP pours out a wide variety of *vent-knit* cloth at rates up to 28 yards per hour. The machine has Supreme's mill-proven, trouble-free design and production-boosting construction features.

The standard Model LRP *Vent-Knit* Machine is 24" diameter—24 Feeds—18 needles per inch. Other diameters and cylinder cuts are available.



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More and more technicians are changing over to sapphire textile guides to protect the quality of their yarns. More and more producers find that their yarns "drag" less over sapphire guides than over any other guides they have ever used. A large rayon spinner reports *twelve years* of trouble-free service from sapphire guides in locations where other guides failed in a *few months*. It all adds up to higher output, better quality, and lower cost per pound of yarn.

"Linde" synthetic sapphire materially increases the life of your guides. Let us show you how. We'll be glad also to help you with the design and testing of standard or special sapphire guides for your plant.

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Books of Interest

Bulletin Lists Chemical Developments

TEXTILE CHEMICALS, Research Bulletin No. 62, by Research Information Service, 53 Nassau St., New York 38, N. Y.

This bulletin lists and abstracts 50 reports under four main headings: Surface-Active Compounds, Finishing Agents, Proofing Agents, and Diverse Manufacturing Processes. The following few examples from the wealth of valuable technical data on new products and processes may serve to illustrate the scope of this bulletin.

A process for producing water-soluble sulfonic acids makes use of novel catalysts that lead to high yields of alkylarylsulfonates of excellent quality (Report No. 5329; $12.00).

A process for producing polyglycol ethers yields products of superior emulsifying power well-suited for the preparation of textile lubricants (Report No. 5332; $11.00).

The use of polyvinylpyrrolidone in dispersing agents containing sulfonic acids facilitates dispersion and makes addition of a preservative unnecessary (Report No. 5335; $3.75).

A process for producing surface-active agents from residues of the butadiene synthesis gives highly effective wetting agents, emulsifiers, and detergents (Report No. 5340; $3.75).

Certain sulfur-containing ethers constitute very economical softeners, which also improve the washfastness of substantive dyeings (Report No. 5344; $3.00).

Condensates of imino ether salts and polyvalent amines are suitable as sizing agents distinguished by high resistance to strong mineral acids (Report No. 5348; $7.00).

A process for stabilizing textile-finishing agents proposes substances that prevent the aging of methylol compounds (Report No. 5351; $3.75).

Mothproofing agents composed of improved arylsulfonic aralkylamides are highly effective and characterized by good fastness to ironing and excellent heat resistance (Report No. 5356, $5.00).

Valuable intermediates for textile aids are obtained by preparing derivatives of low-polymeric unsaturated carboxylic-acid polymers (Report No. 5360; $7.00).

How To Prevent Radiation Damage

Control and Removal of Radioactive Contamination in Laboratories, National Bureau of Standards Handbook 48, *iv*, 24

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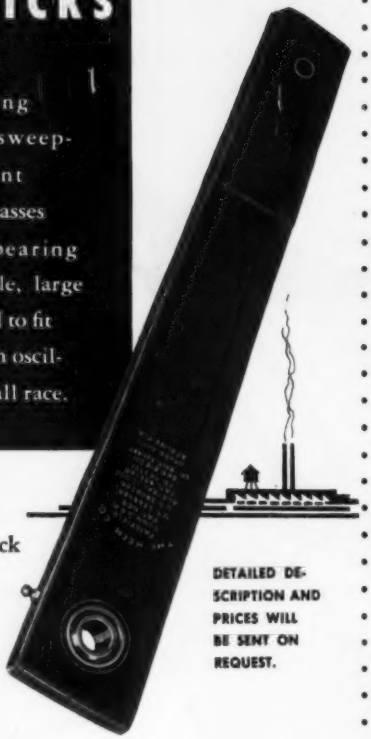

This construction eliminates jerky pick action because there is no slack to be taken up due to an enlarged stud hole. The result is a smoother and softer pick action, longer-lasting sweepsticks, and less operating down-time and production losses.

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pages, 15c, Government Printing Office, Washington 25, D. C.

This handbook gives detailed information on laboratory procedures designed to minimize the possibility of any accident involving radioactivity and to minimize the effects if such accidents do occur. The handbook was prepared by the Subcommittee on Waste Disposal and Decontamination.

In addition to including a number of general safety precautions, the handbook contains specific recommendations and discussions intended primarily for the guidance of such users of radioactive isotopes as universities, hospitals, and industrial concerns. Wherever practical, recommendations are presented separately for different groups of isotopes.

Contamination of the person or of laboratory areas and equipment is a problem of fundamental importance to everyone working with radioactive isotopes. Constant vigilance must be maintained by every user not only to prevent contamination but also to contain its spread. The primary concern in this regard is always the protection of workers in the area from the health hazards of potentially dangerous radiations, but the maintenance of uncontaminated equipment and laboratories is also important if precise and reliable results are to be obtained. The handbook discusses permissible levels of contamination and decontamination procedures.

New Note on Crystal Balls

BUSINESS FORECASTING, Principles and Practice, by Frank D. Newbury; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; cloth, 273 pages, $4.75.

This book is an accumulation of organized facts and hypotheses pertaining to the science of sound business practice.

Fifteen chapters cover forecasting in its various functions; as a tool for management, measuring production needs, spending and income relationships, predicting business cycles, sales volume, etc.

The author comments that in some instances a mere prediction of the business trend is all that is needed; but management will go to extremes to accumulate inexact figures and "guesses" and employ them in a formula that will be no better than an outright guess would have been.

"There is a golden common-sense mean between pure guessing and too much mathematics," says Mr. Newbury.

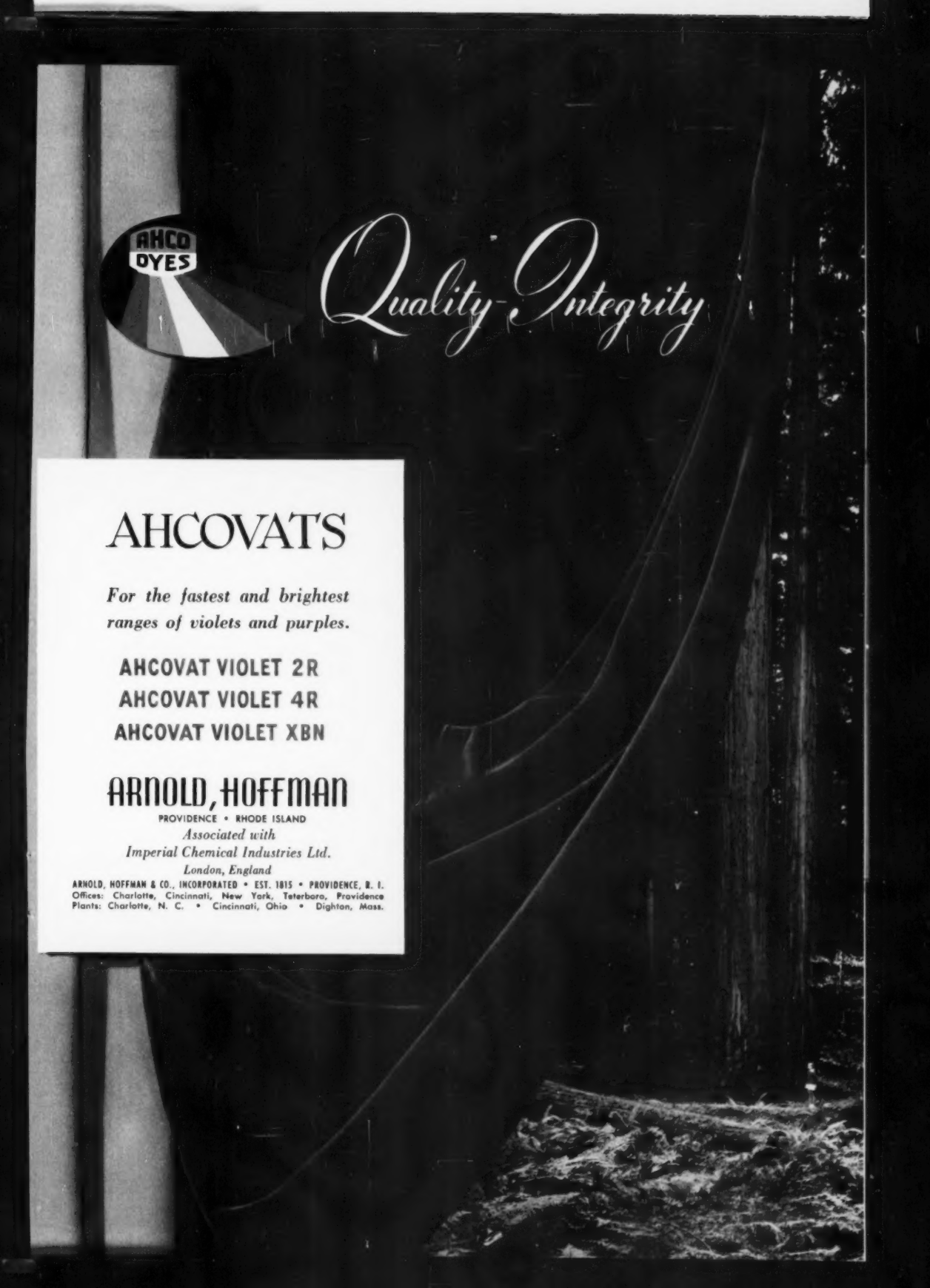
Interesting "Background" Book on Wool

THE WORK OF THE WOOLMAN, by Harry Haigh; E. & F. N. Spon Ltd., 22 Henrietta St., London, W.C. 2; cloth, 106 pages, $1.30.

The author presents a great number of facts about wool terminology and handling methods in an easily read form. Many sketches, maps, and tables are included.

This little book is recommended for its interest to students and teachers, but is not of great interest to anyone acquainted with the wool trade.

For more information, write direct or use Reader Service post card.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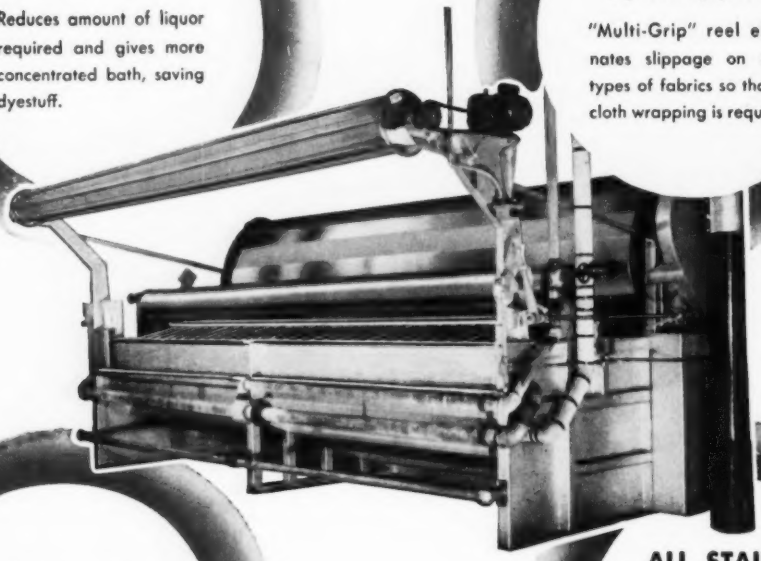

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Round Table

(Continued from page 156)

PRODUCTION IN BRITAIN

Dear Editor:

We have just received our February copy of TEXTILE WORLD. We have read with great interest your message to American industry on "How To Help Britain . . . and Ourselves" (page 106a).

In this brief statement you have explained the situation in our country in few words, and as clearly as we have seen it stated anywhere.

We appreciate very much the fairness of the statement that you made, and your good wishes for our success in increasing our home production.

We are engaged here in making automatic looms and are delivering the bulk of our output into the British industry. Every weaver's unit of automatic looms installed releases three or four operatives for other work, and increases the productivity of the worker operating the new looms.

It is a slow process, and we hope that our American friends will be patient with us. We want to share a free world with the United States.

HUGH DE G. GAUDIN
British Northrop Loom Co. Ltd.
Daisyfield, Blackburn, England

DUCK WEAVING

Dear Editor:

In the October, 1951, issue was an article, "To Weave Duck on Plain Looms," written by Mr. W. C. Westbrook.

The author states emphatically in the article that the warp line should be straight, that is, the top and bottom sheds should have equal tension. This statement is, in my opinion, erroneous.

It is true that in duck weaving a high warp line is not necessary to give a face and good cover. However, a high warp line is necessary to facilitate beating up of the extremely heavy pickage. I cannot see how a heavily picked duck can be successfully woven with a straight warp line and both sheds equally tensioned.

With this setting, it would be extremely difficult to beat up the filling, especially since the article deals with looms that are really too light for duck weaving. Even on heavily built duck looms a high warp line is advisable.

If I were going to weave duck, I would set the looms to give as high a warp line as possible without causing the looms to make overshots over the slack top shed.

I would also time the harness cams as early as possible, perhaps even as early as at bottom center of the lay. With this early timing, the filling would be beaten up behind the crossed shed, and the top shed would be slack enough to allow the filling to roll in.

IVAR O. MOBERG
Spray, N. C.

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You can't control the *value* of the dollars you receive; but you can control the *number* of dollars you are paid!

Today, particularly, you must make more money than ever before because you can no longer depend on small yearly increases to maintain your standard of living. But, regardless of economic conditions, a clerk will always receive a clerk's salary; he can expect little more than minor raises until he qualifies for more responsible work.

The only way to "beat the squeeze"—to keep ahead of sky-rocketing costs—is simply this: *Lift yourself out of your present class into the class above!*

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"Forging Ahead in Business" is an inspiring 64-page book that explains how you can bridge the gap between your present job and a better one—how you can *prepare now* to meet the challenge of future opportunities. It points the way to new and exciting avenues of achievement. And it outlines the Alexander Hamilton Institute's executive-training course which has sparked thousands of men to highly-paid positions.

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Workers *Like These*
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Can Help Your Plant Succeed in the Birmingham District

COMPETENT, cooperative working men and women—largely native born—have played a major role in the success and growth of many Alabama industries.

Avondale Mills is one notable example. This Company was founded in 1897 with a very small capital investment by the late Governor B. B. Comer. Avondale Mills today has a corporate worth of over $25,000,000. Its twelve plants in seven Alabama towns spin and weave one-fifth of Alabama's cotton crop into many fabrics marketed throughout the world.

Answering the question: "What's the mainspring of Avondale's great growth?" President Craig Smith says:

"Our loyal and efficient personnel. Those pictured here are a representative cross section of our six thousand employees. Friendly cooperation of the people in our several communities and the fair treatment we have received from government at all levels have likewise contributed importantly to the success of Avondale Mills in Alabama."

Within the past few years many textile mills have come to Alabama. There are opportunities today for many more—especially in the Birmingham area with its large reserve of women workers who want jobs now. We invite you to investigate.

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Mill Maintenance

Here's How You Can Stop Ladder Accidents

The use of ladders by maintenance workers in a textile plant is always hazardous. Permanent injuries and deaths occur from accidents that are caused through carelessness or lack of knowledge in the use of ladders.

Westinghouse Electric Corp. has made a study of the causes of accidents, and the following information is based on the results of their research on this subject.

1. Every ladder should be given two coats of shellac before it is placed in service. The painting of ladders is prohibited because paint may conceal defects in the material used in the construction of the ladders.

2. Every ladder should be inspected at least once each month.

3. Ladders should be examined by the workmen each time before they are used. When a ladder is found to be broken, cracked, or defective in any way, it should be tagged for immediate repair.

4. Ladders of the proper length should be chosen for each job. Short ladders are too weak to be used when they are spliced together. Make-shift extensions added to ladders are dangerous, and their use is prohibited.

5. Only ladders that are equipped with safety feet or spurs should be used.

6. When a ladder is carried from place to place, the upper runner should rest on the shoulder and the bottom runner against the body. The end with the safety feet or spurs should be in front and elevated slightly. Heavy ladders should be carried horizontally in the same manner by two men; the first man should place his arm between the first two rungs.

7. Care should be exercised on the part of workmen who are working from ladders or when they are carrying or placing ladders to prevent injuries to other employees.

8. Before a ladder is used, it should be placed on a secure footing.

9. A step ladder should always be fully opened before a workman mounts it.

10. When possible, the base of a ladder should be placed one-fourth of its length from the vertical position

For more information, write direct or use Reader Service post card.

Are too many sources a sore spot with you?

In many phases of the textile industry, the manufacturer is forced to buy from many sources. He can't avoid it . . . and it's a costly proposition in terms of time and money.

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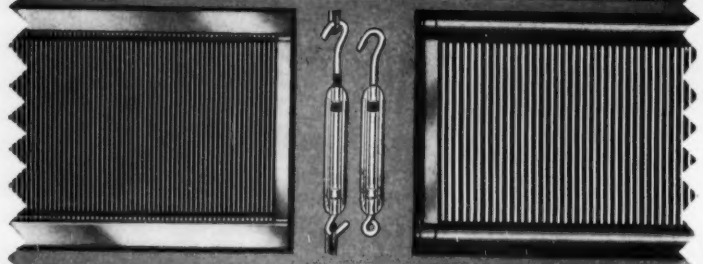
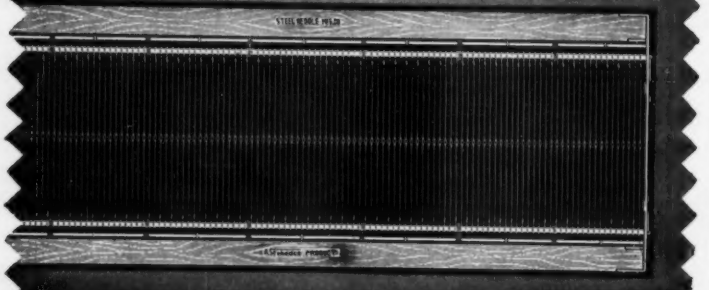


LOOK FOR
STEHEDCO and SOUTHERN
TRADE NAMES THAT LEAD THE FIELD IN QUALITY

Over 200 U.S. Patent grants justify the pride of this company in its many contributions to the textile industry. Mills the world over know the advantages of the standards in Quality and Service set by the trade names STEHEDCO and SOUTHERN. Tracing briefly the early developments which led up to these standards, they find that the early pioneering efforts of this, now, huge organization, have culminated in accomplishing its many objectives.

Through its constant research and experimentation it has brought about many major changes and improvements in loom harness equipment and will continue to seek future improvements, through constant research and development of new materials, designs, construction and methods.



Products that "Weave the World's Needs!"

to obtain a safe working angle. Where possible, the ladder should be securely lashed at the top to a fixed support.

11. When it is necessary to place a ladder in a doorway, care should be taken to prevent the door from being opened against the ladder.

12. It is dangerous to work from a ladder that has been placed against a window sash. A board should be placed across the top of the ladder and held in place by screws to give a bearing at each side of the window.

13. When a workman is working from a ladder that is placed in an alley, or in any other location where it is likely to be struck by a truck or any other object or where there is danger that the ladder will slip, another workman should be placed at the foot of the ladder to prevent accidents.

14. When it is necessary to work from any type of ladder over a machine, the machine should be shut down.

15. Workmen should face the ladder when they go up or come down.

16. Sliding down ladders is dangerous and should be prohibited.

17. Workmen should keep their hands free for use while they climb up or down ladders. Small articles should be carried in pockets or belts; larger articles should be lifted to or lowered from elevated positions by a hand line. The same precautions should be taken when ladders are used in underground work.

A Safe and Quick Way To Clean Valves and Fittings

The troublesome task of cleaning valves and fittings may be made easy if good cleaning methods are used.

Valves that vary in size are often difficult to clean. Since the effective reconditioning of valves depends to a large extent on the deposits left after the fittings have been cleaned, a good cleanser is desirable.

Deposits that cover a wide range of substances have to be removed from valves. These deposits include oil, paint, lacquer, carbon, and carbonized-oil deposits from high-temperature spots on valves.

Caustic solutions will remove most of these substances, but it is unsafe to use strong caustics because of their unpleasant fumes and their accident hazard. A heavy-duty alkaline cleanser that does not give off fumes and is not dangerous to use satisfactorily cleans valves at a reasonable cost, Magnus Chemical Co., Garwood, N. J., reports.

A solution of 8 oz. of this concentrated cleanser per gallon of water is mixed in a tank and brought to a roll-

ing boil. The fittings are dropped into the tank; and, under most conditions, the fittings are clean within 30 min. Fittings that have heavy deposits of substance may have to be left in the solution an additional 30 min. In extreme cases, it may be neces sary to leave the fittings in the solution even longer.

After the fittings are removed from the solution, they are rinsed with water.

Valves and fittings that have a scale condition or have deposits that only an acid treatment will remove should be treated first with the caustic and then an inhibited acid cleaner.

The formula for preparing the scale solution is also 8 oz. of the inhibited-acid cleaner per gallon of water.

The scale solution is heated to 130° F., and the fittings are put into the tank and left for 30 min. or until all the scaly deposits are dissolved.

After the acid treatment, the parts are rinsed with water, given a brief treatment with the alkali solution to remove any residual acid, and are finally rinsed with water again.

Valves and fittings coated with carbonized oil should be treated with a special carbonized-oil solvent and then the alkali solution. The carbonized-oil solvent is used at room temperature, and valves are soaked 15 min. to loosen the deposits. The valves are then placed directly into the alkali solution. No rinsing of the parts is necessary between the solvent treatment and the alkali treatment.

Processing X-51

(*Continued from page 114*)

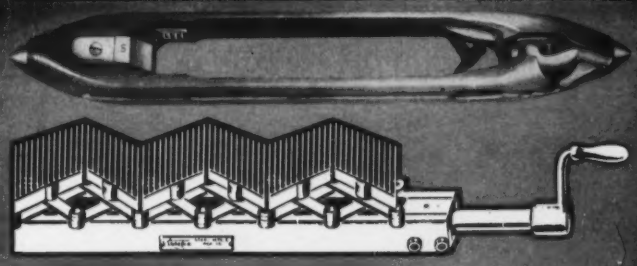
ning X-51 on cotton-type equipment can be applied to processing X-51 staple on woolen and worsted equipment. In general, this information applies to 3-den. staple. Procedure for 1.5-den. is only slightly different.

Relative humidity in the plant is not extremely critical, but it should be above 40 or 45%. Fiber should have a brief opportunity to condition, especially if it has been allowed to become quite cold, as often happens in the winter.

As with all staple, we recommend good blending of bales. We use a lot number and lettering system to assist mills in using bales in such a way as to get the best blending. Mild opening is needed, such as that obtained with a blending feeder. At this stage one will begin to notice the bulkiness of X-51 acrylic fiber.

The bulkiness of X-51 may necessitate minor changes on pickers to keep them from choking. Laps of 12-oz., rather than 14-oz., are recommended,

Stehedco and Southern



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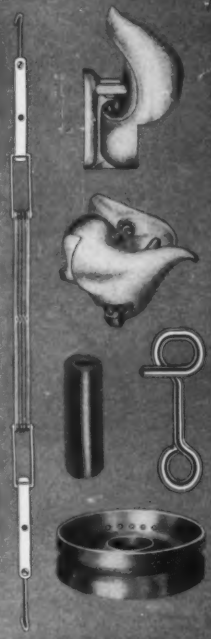
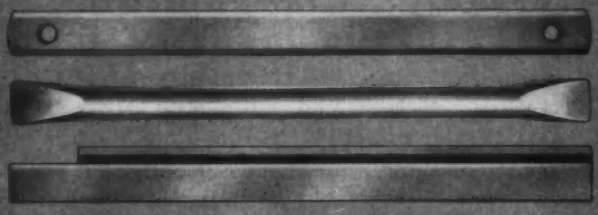
The service obtainable from the loom harness manufacturer is as important to the mill as product quality. The Steel Heddle Manufacturing Company, not content with producing better loom harness equipment and accessories, has made every effort to provide the most efficient and economical distribution and service possible. The location of their many large plants and branch offices has been strategically planned for the benefit of the textile industry.

Competent staffs of Field Engineers are maintained for the express purpose of assisting with mill problems. These men appreciate new applications; they understand what successful product performance means.





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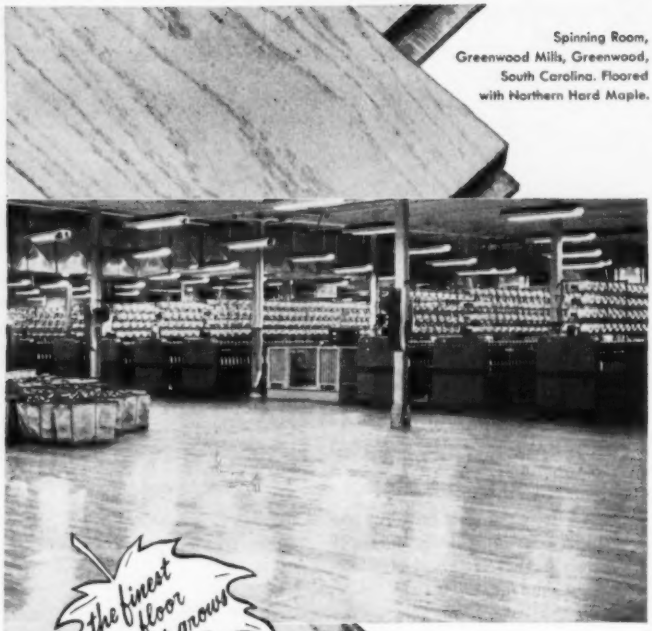

Spinning Room, Greenwood Mills, Greenwood, South Carolina. Floored with Northern Hard Maple.

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Because it has *proved*, through the years, that it makes the best of all textile mill floors, Northern Hard Maple has sold *itself* to the industry, on its merits. Workers like its cheerful brightness and *resiliency* under foot. It's easy to brush clean, creates no dust, harbors no dirt, fights scuffs, scars and dents. It's easy to re-surface and it lasts for years. Even oil soaking doesn't affect its tough strength. The **MFMA** mill-mark assures it is true to species and right as to grade . . . look for the **MFMA** mark on the underside. See Sweet's (13k-MA).

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BEECH AND BIRCH

More Fiber Names Coming!

While American Cyanamid has trademarked the term "X-51" for its acrylic fiber, two other names have been registered but not yet adopted by the company. These new names are "Creslon" and "Cyana." And still more names are being registered.

When any of these names has been officially adopted by Cyanamid, TW will let you know.

again because of the bulk of X-51. Should laps split, this problem can be solved, as is often done with other staples, by running three or four ends of roving into the lap as it is made.

Flat-top cards have satisfactorily handled 3-den. staple in lengths of 1½, 2, and 2½ in. and 1.5-den. in lengths of 1½ and 2 in. A fancy roll is needed for 1.5-den. and recommended for 3-den. fibers. The same fancy roll that is commonly used for nylon staple is satisfactory. If the card is running correctly, it should produce up to 9 lb. per hr. on 1.5-den. and at least that much or more on 3-den. Waste should be about 2%, and very long runs can be made between strippings.

Nothing special need be said about drawing or roving except to use a somewhat low twist multiple in roving, say about 1.08.

Bulk Permits Lower Twist In Spinning

In spinning, no unusual care need be taken, but bear in mind the bulky nature of X-51. This bulk and other special physical properties mean that lower than normal twists should be used. (Needless to say, lower twists mean higher frame production.) For 3-den. stock, yarn strength starts to shoot up at a twist multiple of 2 and beyond (around 10 tpi. for 20s). Maximum strength for 20s yarn is with a twist multiple of around 3; with 30s it is around 3.3. Spin limit with 1¼-in. is 30s and with 2- or 2½-in. slightly above. Spin limits for 1.5-den. have not been determined fully. Initial work has shown that 60s are easy to produce with 1½-in. staple and 80s have been spun. Tests with 2-in. staple are now being run.

With X-51 you can expect very even yarn. Peaks on the Uster evenness tester have strayed below 50 but nearer 70 is more normal. That compares to 90 to 100 for cotton.

Yarn from X-51 can be twist set, but heat should not exceed 160° F.

USE BECCO HYDROGEN PEROXIDE
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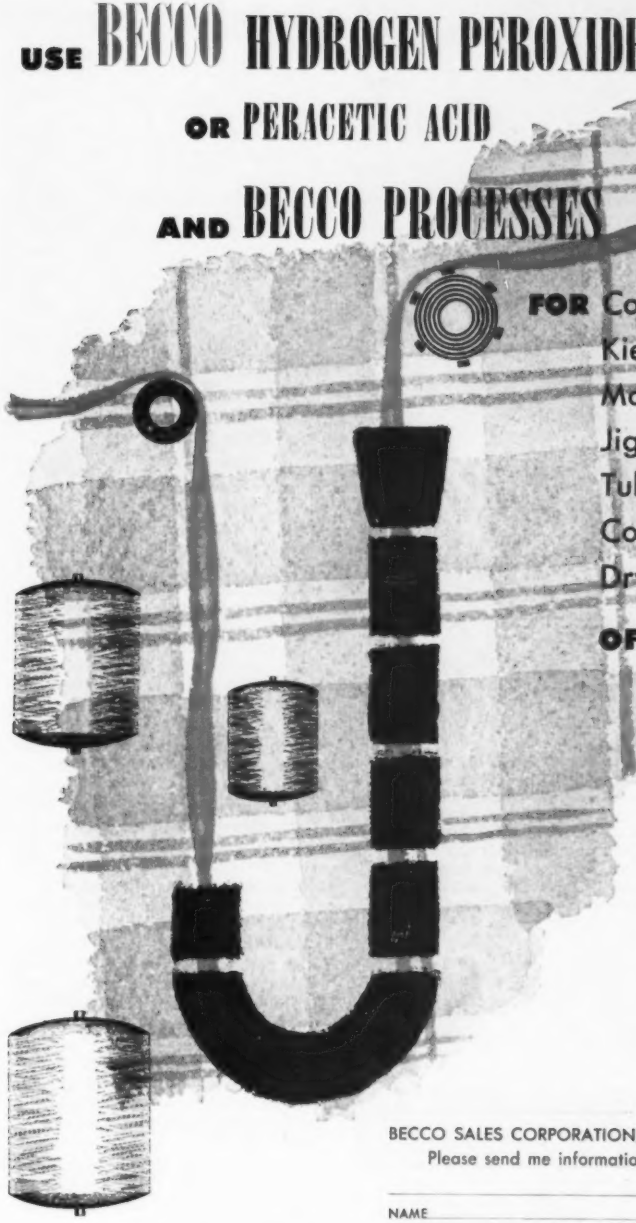

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Ply yarns, of course, can be woven without slashing. Singles can be sized very successfully in a size solution containing about 1 lb. per gal. of a modified starch. Other ingredients should be about ¼ lb. per gal. of synthetic size and small amounts of gum and softener. Temperatures should be kept low: X-51 drys very quickly, and over-baking can be just as troublesome with X-51 as with other fibers. It is best to err on the side of underdrying provided, of course, that the warps are not downright wet. Bear in mind that X-51 is virtually as strong wet or dry. It is relatively unaffected by water.

Don't Put in Too Many Ends And Picks in Weaving

In weaving acrylic yarns, almost everyone has a tendency to overconstruct, or to try to put in too many ends and picks. We have some evidence that X-51 appears to have a tendency to full. (We are currently investigating this phenomena.) Both of these additional factors must be considered in designing fabrics from X-51 spun yarn. An overconstructed fabric made from overtwisted yarn works against the natural advantages offered by X-51 and other acrylic fibers.

Weavers aren't the only ones to overconstruct when using X-51 or even other acrylic types. In addition to bulkiness, X-51, as mentioned earlier, seems to full a little. When both these properties are taken into account and the spun yarn is not overtwisted, knit fabrics with an excellently full, warm, pleasant hand are produced.

The information given thus far has to do with X-51 used in 100% form. We have not progressed far enough to report on our work with blends except to say that best results will probably come from blends with hydrophilic fibers: rayon, wool, cotton, azlon. For some uses, we can see advantages in a three-fiber blend that would include nylon. For the present, at least, we recommend against blends with acetate or with other hydrophobic fibers.

The following discussion on the dyeing properties will be divided into two parts, namely, staple and continuous filament.

Staple Scouring Can Be in Two Ways

One of the important properties of X-51 acrylic staple is the clean whiteness of the fiber itself. It is advisable that all preliminary processing of the fiber be carried out in a manner designed to avoid discoloration. Since

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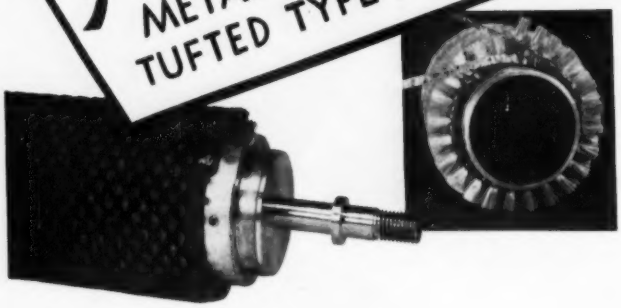

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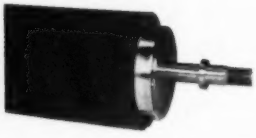

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X-51 is made from a polymer of acrylonitrile, it has a property that is common with all acrylic fibers, namely, exposure to alkali at high temperatures and for prolonged periods of time will cause yellowing. This yellowing can be prevented by reasonable care in processing, and if yellowing does occur, it can be corrected by subsequent treatments.

X-51 can be subjected to a normal wool-scouring procedure to produce a good clean bottom. For example, it has been scoured for 15 min. in a 30:1 bath containing 1% soda ash and 0.5% soap at 120° F. to produce a clean white fabric. Temperatures in excess of 140° F. and scouring times in excess of 30 min. at 120° F. should be avoided. If, however, due to machine stoppages or faulty temperature controls, excessive times or temperatures occur, the original whiteness can be restored by an acid rinse. It has been found that repeated home launderings do not materially change the color of the fiber.

Another general method for scouring X-51 acrylic staple that has produced good results is as follows: The fabrics or yarns are boiled for 15 min. in a 30:1 bath made up of 0.25% Deceresol OT wetting agent containing 0.1% of glacial-acetic acid. Other wetting agents and detergents that have been successfully used in this scouring process are Duponol WA, Nacconol, and Deceresol 22 with no yellowing. The time and temperature of processing are not critical since no changes in the color of X-51 have been noted at any time. A pH range of from 3.5 to 5.5 is recommended, although a pH up to 7 can be tolerated.

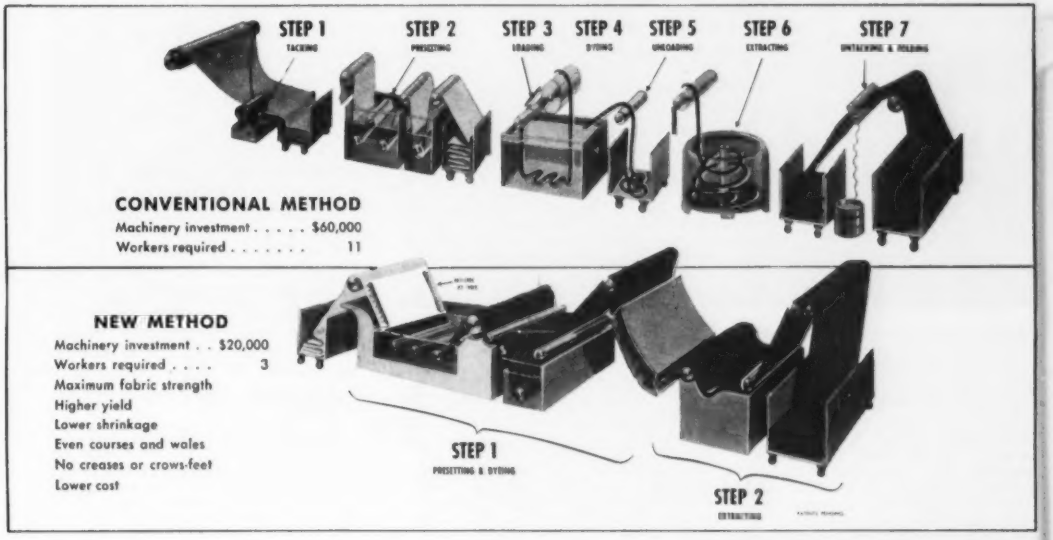
Several Classes of Dyes Can Be Used

X-51 acrylic staple can be dyed with the following classes of dyes: acetate, acid and direct, basic, vat, and soluble vat. These will be discussed in that order. It must be pointed out at this time that the information on dyeing is based almost entirely on laboratory studies.

Dye Close to Boil With Acetate Dyes

Staple can be dyed with practically all acetate dyes. The dyeing procedure is quite simple. The acetate dyes are dispersed in water alone. The use of dispersing agents, e. g., Duponol WA, soaps, etc., is not recommended. The dyeings should be made at temperatures as close to the boil as is practical. Temperatures below 200° F. should be avoided. At such

New Avisco continuous dyeing process for Acetate Tricot steps up quality... lowers costs



A new simplified method proposed for dyeing acetate tricot (see flow chart above) developed by Avisco greatly improves fabric quality, reduces shrinkage and lowers costs. The Avisco system presets and dyes the fabric in open-width form, thereby eliminating the necessity for tacking and untacking. The results achieved from this method as compared to dyeing in the conventional rope form, indicate that fabric strength is increased by at least 10%. The shrinkage is better and the yield is greater.

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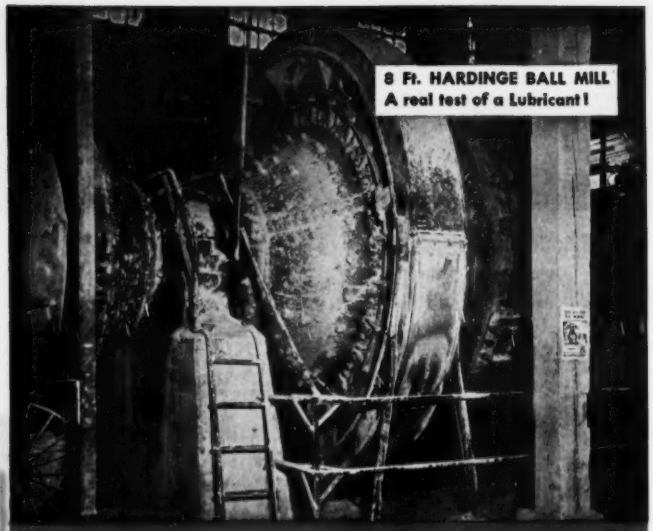

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temperatures, dyeing times of from 1 to 1½ hr. are required.

In general, the dyeing time may be reduced and the fastness properties, at equal depths of shade, improved by increasing the dyeing temperatures. Excellent dyeings have been made in 20 min. on packages and raw stock in a one-package laboratory machine, under pressure, at temperatures between 230° and 250° F. The depth of shade per unit of dye and fastness properties were improved materially. While this dyeing technique shows real promise, there is one note of caution: the packages must be very soft and evenly wound.

As a class, these dyes show good build-up properties and heavy shades can be obtained. At equal depths of shade, the light fastness is about equivalent to that on nylon staple, the fastness to washing is comparable, and the crocking is negligible.

Cuprous-Ion Method Used With Acids and Directs

When dealing with most hydrophobic fibers, the classical division between acid and direct dyes is not clearly drawn. Using the so-called "cuprous-ion" method, most acid and milling dyes and a surprising number of direct dyes can be applied to X-51 acrylic fiber.

A large variety of colors can be obtained in depths ranging from pastels to deep, heavy shades. With care in the quantity of copper sulfate used in the dyeing, bright shades can be produced.

In general, the fastness to light, washing, perspiration, and crocking are quite similar to that of the corresponding dyes on wool. To obtain maximum fastness, these dyes must be applied at a good rolling boil.

Since no dyeing assistants such as p-phenylphenol are required, vigorous scouring after dyeing is unnecessary. Rinsing to remove excess surface dye is sufficient.

In general, the preferred method for applying acid and direct dyes by the "cuprous-ion" method is to first treat the fiber with 1 to 3% copper sulfate, followed by 3 to 5% hydroxyl ammonium sulfate at the boil for 10 min. Dyeing is carried out at the boil for 30 min., then 4% sulfuric acid is added, and boiling is continued for an additional 30 min. to 1 hr. The fiber is then rinsed well and dried. For maximum fastness, the higher quantities of copper sulfate may be required, but for added brilliance of shades, the lower percentages are preferred.

Basic Dyes Give Good Fastness

The use of basic dyes to color X-51

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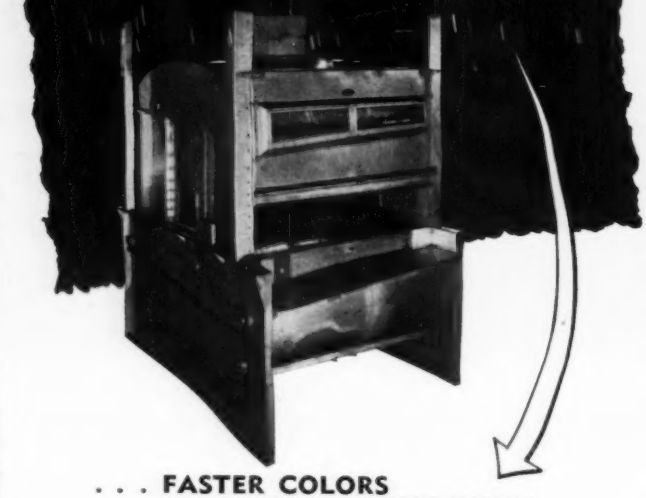

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acrylic staple shows some interesting possibilities. In general, the dyes exhibit the usual brilliance, good wash fastness, good fastness to crocking, and in most cases exhibit rather good light fastness. In the application of basic dyes, no assistants or mordants are required. Care in dyeing must be exercised because of the rapid rate of dye exhaustion. This rate of exhaustion can be controlled by starting the dyeing at low temperatures. The goods are kept at room temperature for 20 min., after which the temperature of the dye bath is raised gradually to about 160° F. and the dyeing completed.

Vat Dyes From Alkaline Bath Can Be Used

X-51 staple is unique among the acrylic fibers now on the market in that it can be dyed a wide range of shades with vat dyes from an alkaline bath. In common with most of the other fibers, these dyes can be applied also by modifications of the vat-acid methods. These methods are, however, more difficult to control and good end results are somewhat uncertain.

The fastness to washing, perspiration, and crocking is excellent. If properly applied, the fastness to light is in the range expected, providing the depth of shade is taken into account. It should be pointed out at this time that there are some anomalies to be found among these dyes. The usual cotton and rayon shade cards and fastness charts should not be relied upon for accurate data as to performance on hydrophobic fibers.

When applying the vats in alkaline baths, the dyes may be applied by either the reduced-vat procedure, or they may be pigmented onto the X-51 and then reduced in the presence of the goods.

In dyeing X-51 staple by either the reduced-vat method or the pigmentation method, the concentration of caustic soda and hydrosulfite should not exceed 1 oz. per gal. and 1¼ oz. per gal., respectively. The dyeing should be started cold, and temperatures above 160° F. should be avoided. Since prolonged exposure to caustic at high temperatures will cause some discoloration of X-51 staple, the oxidation of the vat dye should be carried out at room temperature with hydrogen peroxide and acetic acid. The finishing is carried out at the boil with acetic acid and Duponol WA.

Light to medium shades can be produced on X-51 acrylic staple by means of the soluble leuco-ester vat dyes. In view of the ease with which X-51 staple can be dyed by the regular vat

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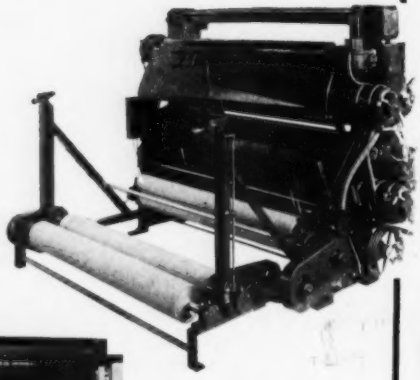

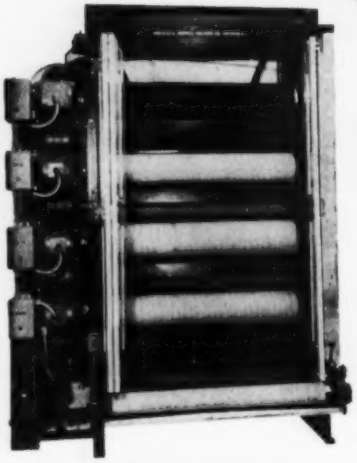

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dyes, the use of the more expensive soluble vats may be somewhat restricted. In the case of certain blends of other fibers with X-51, the soluble vats may show some advantages. Each blend, however, is a study in itself.

Filament Dyeing Differs Widely From Staple

The dyeing properties of X-51 continuous-filament acrylic fiber differ materially from the dyeing properties of X-51 staple. The principal difference is the depth of shades obtainable. The continuous filament can be dyed by the following classes of dyes: acetate, acid and direct, basic, vat, and soluble vat.

Before discussing the dyeing of X-51 acrylic filament, it must be pointed out that the statements that will be made are based on fewer dyeing experiments than was the case with the staple. To date, less filament yarn has been available for study.

The most efficient scouring method that has been devised to date for X-51 continuous filament is to boil the fabric 15 to 30 min. in a solution containing 0.25% Deceresol OT wetting agent and 0.1% glacial acetic acid.

Acetate Dyes Show Greatest Promise

At the present state of knowledge, the acetate dyes show the most promise for dyeing continuous filament. The build-up in depth of shade, except at temperatures above the boil, is not quite so good as the build-up on the staple.

At the boil, light to medium shades can be produced. At temperatures of 240 to 250° F., heavy shades can be obtained.

In general, the fastness of these dyes on continuous filament are better than the fastness on X-51 staple and are about equal to the fastness on acetate filament. This statement holds true for fastness to light, washing, perspiration, and crocking. The fastness to gas fading appears to be better on X-51 than on acetate. Some dyes do, however, show color changes when subjected to the usual gas-fading test.

The depth of shade, per unit weight of dye in the dye-bath, and the fastness properties obtained at equal depth of shade are improved appreciably by an increase in dyeing temperatures.

The dyeing procedure is the same as that described under the section on the staple.

Cuprous-Ion Method Build-Up Not as Good as on Staple

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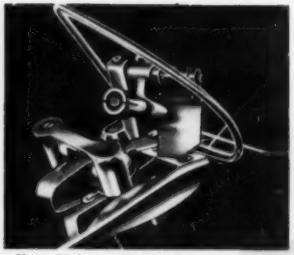

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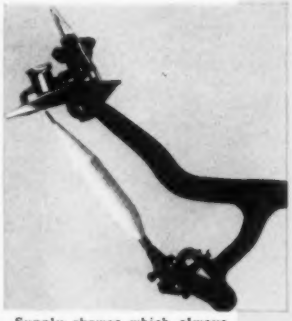

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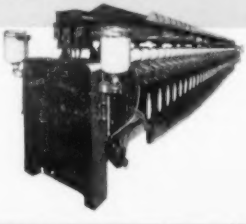
FOSTER MODEL 102

The Flexible Winder



FOR COTTON, MERCERIZED, WOOL, WORSTED, MERINO, SPUN SILK OR SPUN RAYON YARNS

made between acid and direct dyes. A great many of the dyes from these two classes can be applied to X-51 using the "cuprous-ion" method. The dyeing procedure is similar to that described previously.

For continuous filament, the build-up of these dyes is not so good as with the staple. Light to medium shades can be produced.

The fastness properties of continuous filament colored by these dyes are about the same as those for the staple at equivalent depths of shade.

Temperature Control Important With Basic Dyes

Basic dyes will produce some interesting shades on X-51 continuous filament. Since these dyes exhaust very rapidly and don't seem to move after they are applied, a careful control of the initial dyeing temperatures is advisable.

The technique of dyeing is the same as that recommended for the staple. Heavy shades are not advocated because of the possibility of crocking. Light to medium shades do not crock excessively. The other fastness properties are better than would be expected for these dyes on the more conventional fibers.

Apply Vats by Modified Vat-Acid Method

X-51 continuous filament, in contradistinction to the staple, cannot be dyed with vat dyes from an alkaline bath. Light to medium shades can be produced by applying these dyes by a modified vat-acid method. The fastness to washing, perspiration, and dry cleaning is excellent. The light fastness is also outstanding. At the present time, however, dyeing costs will be rather high. In spite of the expected high cost, this method of dyeing may find a place for certain end uses of filament yarns.

Light to medium shades can be produced by applying soluble-vat dyes from a sulfuric acid bath to X-51 continuous filament. The fastness properties of the dyed material are very similar to those obtained by dyeing with vat dyes. Here again, the dyes cost will be rather high.

We have accumulated a great deal of information on dyeing X-51 acrylic fiber and are constantly learning newer, better, and easier ways. With this background of information, we have a head start and are actively investigating the dyeing of X-51 in blends. We feel that for all synthetic staples, blends will continue to become of increasing importance.

When selecting your fibers for making blended fabrics, keep the dyer

IMMEDIATE DELIVERY on RCA high-frequency ELECTRONIC GENERATORS for heating and drying of textiles

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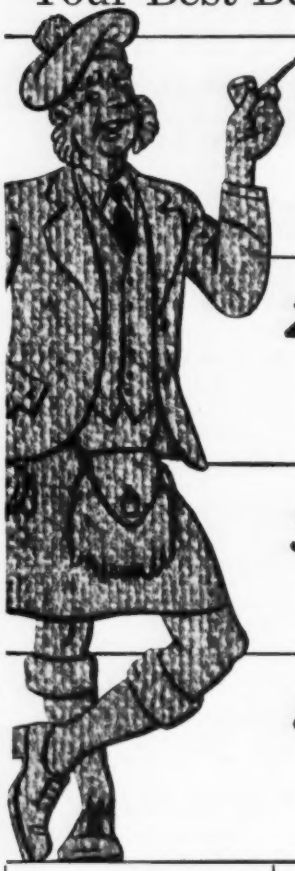

1 You Benefit from Our Large Operations

Bemis is the largest burlap importer. Whatever the supply situation, Bemis customers are in the most favorable position.

2 You Benefit from Our Knowledge of Quality of Burlap

For many years, producers and users alike have accepted Bemis' grading of Indian burlap as the standard for the industry.

3 You Benefit from Our Knowledge of the Burlap Market

We follow the market daily in our regular operations.

4 You Benefit from Bemis' Large Facilities

Sixteen plants and seventeen additional sales offices, all strategically located, assure you a dependable source of supply.

Bemis is headquarters for all grades and weights of burlap . . . including widely-used 10-oz., and the popular, special-finish Angus, which only Bemis imports.

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in mind and do not ask for the impossible. Until the entire industry has learned a great deal more about dyeing fibers that compete with one another for dyes, the dyer will often be placed in a very awkward situation.

Hoosac Boiler

(*Continued from page 133*)

widely fluctuating steam loads, particularly during the summer months when slashers are the only steam-consuming machines in operation.

Our installation, engineered by Frank I. Rounds Co., Newton Highlands, Mass., included all pertinent boiler-room equipment and the engineering of a new low-pressure heating system with the provision for furnishing low-pressure steam to the equipment. The resultant installation is an excellent one, complete in every detail.

Hoosac Mills did not attempt to reduce the first cost of the installation and decided to make the plant large enough for future plant expansion. With the thought in mind that preventive maintenance costs less than the cure for equipment that has been neglected, the job was sized so that only two of the boilers would be needed to supply the steam necessary for capacity operation. Consequently, it is possible to rotate the boilers so that all of them can periodically receive the service and maintenance that will prolong their life.

Performance Is Excellent

Upon completion of the installation, and after starting service was initiated, a check was made to see if the units were living up to their expectations. With Orsat, fuel-oil meters, and steam-flow meters included in the installation, it was a simple matter to check boiler output and compute efficiency. It was found that boiler efficiency exceeded the 80% guaranteed by the manufacturer. After eight months of operation without tube cleaning, there is no noticeable change in stack temperature, which indicates that this efficiency is being maintained.

The New Bedford Div. manufactures colored Madras, oxfords, and broadcloths in fine-count shirtings and dress goods. Consequently, our steam needs are exacting if we are to control every process in our plant.

Considering the savings that we have shown and the fact that there is a provision for expansion without the addition of more steam-generating equipment, Hoosac Mills finds its choice of steam boilers a profitable one.

What's new about U. S. Rubber's warp tubes?

PRODUCTS OF U.S.RUBBER SERVING THROUGH SCIENCE

First, they do not crush easily, nor do they chip, splinter or roughen around the ends. That's because they are made of Uscolite, the sensational rubber-plastic compound. Uscolite warp tubes provide maximum resistance to abuse in a thin-walled tube. They hold yarn well, minimizing sluffing. Because they are molded in precision-built molds to close tolerances, Uscolite warp tubes seat uniformly on the spindles. There is never any working down on the spindle.

United States Rubber Company makes a *complete* line of textile mill specialties, incorporating *new* economies and *new* highs in product quality. Write to address below.

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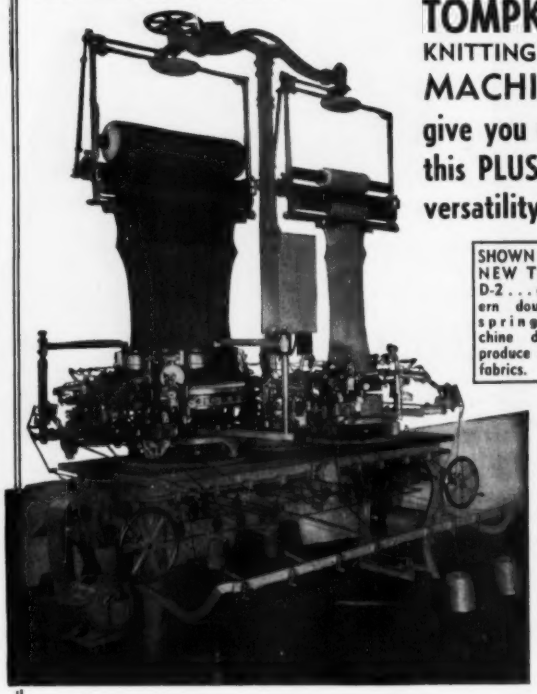
TOMPKINS KNITTING MACHINES give you all this PLUS fabric versatility!



SHOWN HERE is the NEW TOMPKINS D-2 . . . a fully modern double head spring needle machine designed to produce a variety of fabrics.

- JERSEY CLOTH
- SINGLE & DOUBLE PLUSH with single or double backing
- TERRY CLOTH
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and others!

DOUBLE HEAD MODEL D-2 (above) is equipped with individual motor and drive for each head. New stop motion with furnishing wheels control each end of yarn and prevent imperfect feeding of yarn to needles . . . imperfections are caught before they get into the cloth! Yarn tension always remains constant and steady for delivery from furnishing wheels . . . for a reduction of at least 50% in needle replacement expense! Optional equipment available include a 3-color (3-thread striper as well as a foolproof pattern attachment for putting in or taking out a pattern.

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MODEL B-15
Latch needle type, plain jersey stitch. Recognized simplest and easiest to operate machine in the world!

MODEL S-1
Single head, spring needle machine. Hailed for its extreme versatility, maximum flexibility and wide range of capabilities!

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ESTABLISHED 1846 . . . over a century of continuous service to the knitting industry throughout the world. Write for complete data.

Endless Checkstraps

(*Continued from page 123*)

The newer X-D looms have removable lay-end plates and front brackets with three fingers that make it possible to use endless straps with little effort. If the loom is not equipped for endless straps, the bracket on the back will have to be changed to the three-finger type.

Older looms, both X-D and X-2, will have to have both the front and back brackets on both ends changed to the three-finger brackets.

If the looms do not have removable lay-end plates, the entire picker stick must be loosened to place an endless checkstrap on the loom.

On a new checkstrap, the adjusting fingers, front and back, should be just tight enough to keep the strap from sliding freely. After the strap has been adjusted, the parallel spring is adjusted with medium-light tension.

The picker stick is pulled to the extreme forward stroke and released so it can fall back against the checkstrap, and if the tension on the strap and parallel spring is correct, the back of the picker stick will stop 1½ to 2 in. from the lay-end strap.

If the picker stick does not position itself to the 1½ to 2 in. dimension, the parallel spring or the strap-adjusting fingers must be readjusted. Care must be taken to keep the tension equalized on the back and front adjusting fingers.

After the checkstrap is set, the shuttle must be boxed in the binders and box fronts. Ideal shuttle-boxing settings must be made because endless checkstraps are more sensitive to atmospheric changes than slotted straps, and, consequently, tight shuttle boxes will cause irregular shuttle checking that will result in loom slams.

What Length of Strap Do You Need?

Usually, X-2 looms use 8¼-in. endless straps and X-D looms use 9-in. straps. X-D looms sometimes use 8¼-in. straps.

The pick cam and toe, by influencing the picker-stick stroke, and the length of the quill that is being run in a loom help to determine the length of an endless checkstrap.

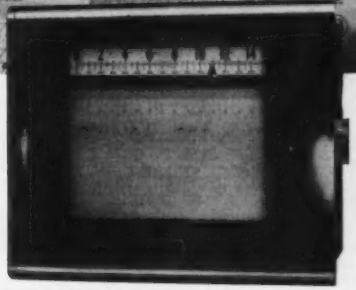
The length of an endless strap is measured by holding the strap so the width will be 2 in. on the inside; the resulting inside measurement, lengthwise, is the length of the strap. Ordinarily, the length of an endless strap for a specified loom may be determined if you—

1. Place the correct checkstrap brackets on the loom.
2. Place the checkstrap in the brack-

and chose the

BRISTOL DYNAMASTER

Continuous-balancing electronic recorder



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As the recording unit in their instruments, they all selected Bristol's Dynamaster. When you choose the Dynamaster for your own measuring needs you are assured of the same accurate, precise instrumentation demanded by these instrument makers.

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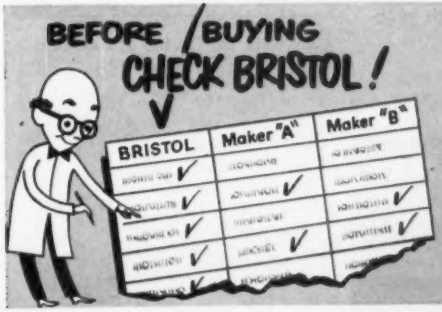

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LOWELL SHUTTLES, widely recognized for their quality for more than half a century, include automatic and non-automatic types for all kinds of textile fibres and mills. Lowell Fibre Covered shuttles prevent roughing-up of yarns and the covering is applied to stay. The wood is thoroughly seasoned, carefully dried and finished to specifications. Shuttles can be furnished with automatic tension eyes, if desired.

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ets and adjust the tension on the fingers.

3. Pull the picker stick against the lay-end strap, and pull the checkstrap all the way toward the end of the lay. The clearance between the back of the stick and the inside of the strap should be ¼ in.

4. Push the picker stick to the power stroke against the lay bumper block on X-2 looms. The strap should clear the front of the picker stick by at least 1 in. and not more than 1½ in.

On X-D looms, the stick is pushed against the picker-stick bumper when the bumper is set in the center adjustment position. Here, too, 1 in. to 1½ in. is the correct clearance.

When To Use Endless Checkstraps

On slow-running looms, checkstraps are not a problem, although checkstrap costs are probably the greatest single item in loom maintenance. Checkstraps become a great problem when looms are run at high speeds.

When looms are running at high speed and no other problems are outstanding other than checking the shuttle, endless checkstraps can be used to correct the shuttle-checking fault.

Endless checkstraps run well at 160 ppm. on wide looms (64 in.) and at 170 to 198 ppm. on 44 or 46-in. looms. The life of an endless strap is 8 to 14 mo. at those speeds.

If the humidity and temperature of a weave room is not fairly constant, endless straps should not be used. Sudden changes in the room's atmospheric condition will affect endless straps more than slotted checkstraps.

Loomfixers often dislike endless straps at first because the straps are harder to put on a loom than slotted straps, and new checkstrap settings and methods of adjustment must be learned. After endless straps have been run for a few months, the loomfixers usually like them because of their long life.

Endless straps are run on cottons, spun rayons, and filament rayons with good results.

Answers to Textile Quiz Appearing on Page 156

1. c [TW, Mar. '52, p. 106a]
2. d [TW, Mar. '52, pp. 108-122]
3. b [TW, Mar. '52, p. 123]
4. a [TW, Mar. '52, p. 128]
5. a [TW, Mar. '52, p. 130]
6. d [TW, Mar. '52, p. 132]
7. b [TW, Mar. '52, p. 134]
8. d [TW, Mar. '52, p. 155]
9. a [TW, Mar. '52, p. 280]
10. c [TW, Mar. '52, p. 284]

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RANDO-FEEDER and RANDO-WEBBER Non-oriented WEBS have

- Greater Strength
- Better Resilience . . . Springier
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- Wider Range of Weights . . . from ½-ounce to 15 ounces a square yard
- Greater Range of Thicknesses . . . from paper thin to 2 inches

Only a Rando-Feeder and Rando-Webber can economically blend practically any type of fiber—waste or staple . . . can introduce granular materials and resin powders in combination with fiber materials . . . can produce webs from many materials that cannot be handled successfully on other equipment.

LOOK It will pay you to see and test webs produced by Rando-Feeder and Rando-Webber . . . the textile machine that will process 'most any fiber (vegetable, animal or synthetic) alone or in combination.

WRITE today for more detailed information on how you can have a web made from your own fiber. Curlator Corp., 588 Blossom Road, Rochester 10, N. Y.

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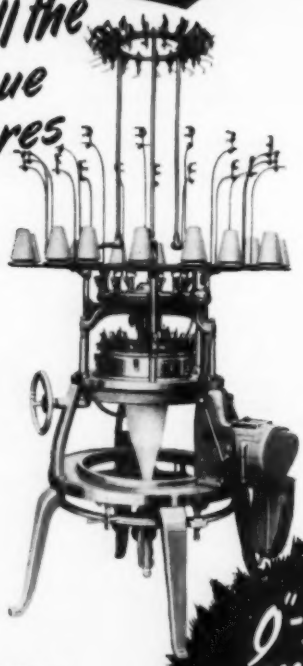
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Fabric Coating

(Continued from page 129)

through the interstices. The use of a thin or sharp knife tends to reduce this problem, but in the long run the floating knife head is better for the open-weave type of work.

Floating Knife Head

The floating knife head consists of a supporting bar, a coating knife that is adjustable both in respect to the vertical and the angle that the knife forms with the cloth, and a supporting idler roll that can be raised or lowered. On some machines, the knife can also be adjusted horizontally so that the distance between the knife and the bar can be varied.

Usually the knife is situated close enough to the bar so that the majority of the coating compound, which is carried in front of the knife, is located over and is supported by the bar.

As with the knife-over-roll coater, the amount of coating and the degree of penetration can be controlled by the size and shape of the knife used, as well as by various adjustments. The amount of tension on the cloth as it comes to the knife also affects the amount of coating and penetration. For example, with a viscous compound and a thin knife set about even with the top of the bar, it is possible to fill quite open sheetings without undue penetration of the compound to the back of the fabric.

A third type of knife coater in fairly common use is the blanket coating head, or the so-called English mill. It consists of a rubber, or synthetic rubber, endless blanket running around two rollers, one of which is driven. The coating knife is mounted over the center of the blanket. The knife is vertically adjustable and the angle that the knife makes with the blanket can also be controlled.

The results obtained with this third type of coating head are somewhat comparable to those of the knife-over-roll type. It is useful for producing Spanish effects on embossed coatings and for coating light-weight fabrics as well as paper.

All three types of knife coaters have been used successfully for the application of organisols and plastisols as well as for solution coating. Latices and other water dispersions and emulsions can also be applied satisfactorily with these machines if the solutions are properly thickened.

Roll Coaters

The simplest type of roll coater

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Bobbins, like everything else, must meet entirely different demands for speed, endurance, strength, dimensions, and materials. That's why

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RECONDITIONS your floors. Fast, easy-to-use Tennant machine brings your floors to life again! Gets rid of dark, rough, oil-soaked fibers . . . leaves floor bright.

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consists of a pair of driven rolls so located that the bottom roll revolves in a pan containing the coating compound. The cloth runs between the two rolls, and the coating compound, which is picked up by the bottom roll, is transferred to the fabric. The top roll is usually rubber covered and is vertically adjustable. The bottom roll is generally made of brass or stainless steel.

The degree of penetration is controlled by the amount of pressure applied on the top roll. The amount of coating applied varies greatly with the viscosity of the solution. This type of coater is not used extensively because of the difficulty in controlling or varying the amount of coating applied.

A modification of the simple roller coater consists of an over-all engraved roll, with a doctor knife, that replaces the smooth roll revolving in the coating pan. This type of head produces a more uniform coating, and the amount of coating applied can be varied by substituting rolls with different depths of engravings. Generally, the use of both of these types of roll coaters is limited to low-viscosity materials.

Another derivation of the simple two-roll coater is the "transfer" or three-roll coater. Here three rolls are mounted in a stack, the bottom roll revolving in the coating pan. The bottom roll is brass or other metal, the center or transfer roll is synthetic-rubber covered, as is the top or backing roll. In most set-ups of this type, all three rolls are driven, although the top roll may be an idler.

This type of machine gives much better control of the amount of coating applied than the two-roll coater does, since the thickness of the film transferred is determined by the space setting between the pick-up and the transfer rolls. The pressure applied to the top roll determines the depth of penetration of the compound into the fabric.

There is also a modification of the three-roll coater, wherein a 100%-engraved roll and doctor knife is substituted for the bottom pick-up roll. This system has one advantage over the two-roll coater of this same type, for with three rolls the coating tends to flow together after it has been deposited on the transfer roll, and better coverage results.

Reverse-Roll Coater

The reverse-roll coater is probably the most versatile of the roller-type coating heads. It is well adapted to the application of organisol and plastisol coatings.

The principles of this type ma-

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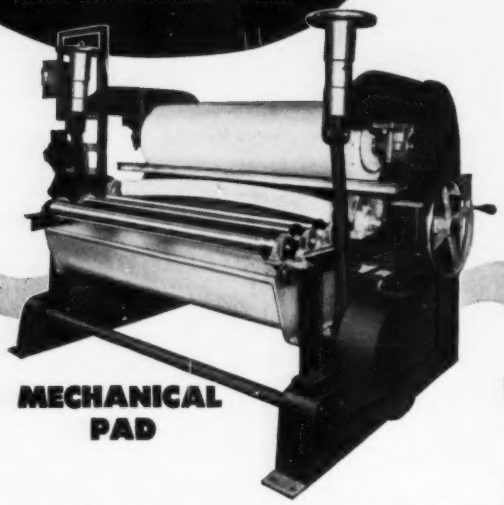

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PAD

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Our engineers will consult with you in the design and installation of the finest in textile equipment, to meet your most exacting operational requirements.

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chine are easy to understand. The coating compound is supplied to the nip between the top or doctor roll and the middle or transfer roll. The doctor roll is of stainless steel or is chrome plated and should have a micrometer adjustment, for its setting determines the thickness of the coating to be applied. The transfer roll is synthetic-rubber covered, although metal rolls have been used in some instances.

The transfer roll should be a variable-speed roll to assist in holding the coating to its surface and to reduce the tendency for the coating to follow the doctor roll. The rubber surface also permits a friction relationship between the transfer roll and the bottom roll, which is often desirable for obtaining adhesion or penetration into the fabric.

The bottom backing roll has a vertical adjustment so that the pressure can be varied to help control coating penetration. The roll has been found to function satisfactorily without particular consideration of the viscosity of the coating compound. It will handle a range of materials from those with the fluidity of water to viscosities in the vicinity of 35,000 centipoises.

The reverse-roll coater therefore is probably the most accurate of the coaters since the doctor roll, if properly designed, is a very uniform meter of the coating applied.

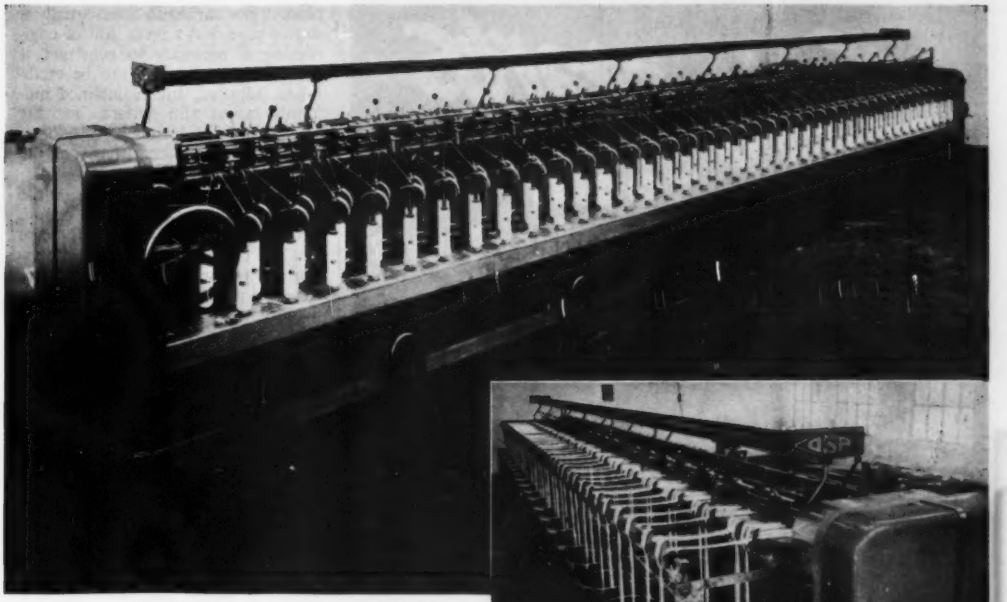
Other Types of Coaters

Spray coaters have been found particularly applicable in cases where it is desired to maintain the contour of the surface to be coated. Such applications as top-coating of embossed materials or coating of fabric, wherein it is desirable to coat uniformly but still maintain the characteristics of a woven or other design, have been successfully coated by this method.

The head consists of a battery of spray nozzles, similar to those used for ordinary spray painting, mounted on a series of bars that are mechanically actuated so that the spray sweeps back and forth across the face of the fabric as it passes in front of the nozzles.

Spray coaters are also useful for surface coatings, such as highluster finishes, where freedom from scratches or other surface defects is quite essential.

The air knife is also useful for the uniform coating of uneven surfaces and the maintenance of contour. Here the coating compound is applied to the surface of the fabric by a simple roll coater and evened out by a jet of compressed air from an air knife mounted above the moving



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This radically new roving frame, a combination of a flyer and a gill box, introduces a new idea to spinning preparation of worsteds and long staple synthetics on the SANT' ANDREA SYSTEM. High production, high drafts and perfect fiber control are assured. Large savings and elimination of repeated roving operations combined with superior quality make the SANT' ANDREA BP GILL FLYER a MUST for any modern long staple unit.

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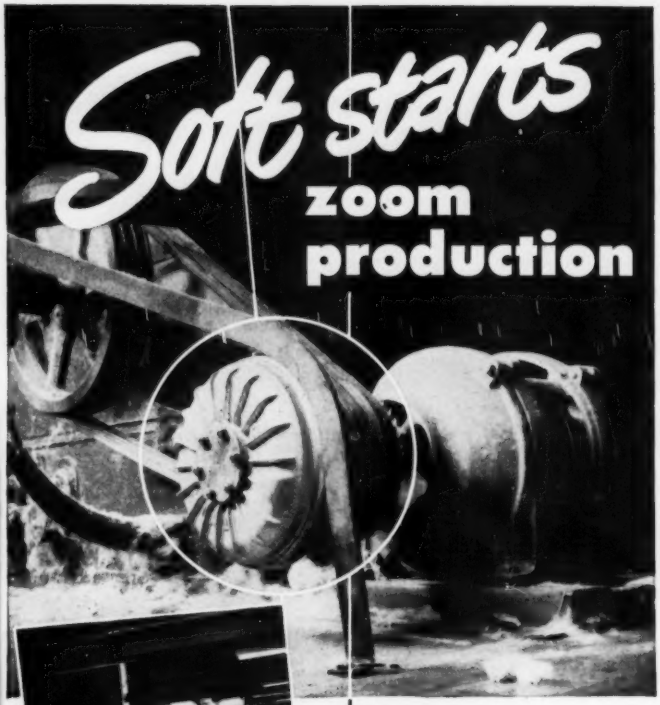

Down time is "way down" since Palmetto Cotton Mill, Palmetto, Ga., installed "soft-starting" Twin Disc HYDRO-SHEAVE drives on its Roving Frames.

"The HYDRO-SHEAVE drive provides a *very smooth, soft start* and minimizes the number of 'ends-down,' thereby saving operator downtime and upping production."

So reported a leading textile mill where sudden jerky starts on the Roving Frames had caused profit-stealing production loss through yarn breakage.

Mill after mill has found the right answer to shock-load starting troubles in the HYDRO-SHEAVE drive . . . and mill after mill has solved winding tension difficulties by installing that other famous Twin Disc Hydraulic Drive—the HYDRO-WYND. Twin results are improved quality *and* increased production.

Twin Disc's Hydraulic Drives are solving starting and winding problems on tenter frames, roving frames, reversing aprons, slashers, padders, re-winds, batchers, dye-rigs, garnett machines, calendars, stokers and conveyors.

Twin Disc HYDRO-SHEAVES help little motors do bigger jobs . . . improve the electric power factor for all motors developing from ¾ to 50 hp. Get the whole story . . . call your Twin Disc Dealer or ask for bulletins on the HYDRO-SHEAVE® and HYDRO-WYND.®

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fabric. The air knife is essentially a slotted pipe, but a great deal of engineering is necessary to construct it so that the flow of air can be established, adjusted, and maintained uniformly across the surface, for the success of the operation is entirely dependent on the consistency of the air sheet.

The use of a second knife, in the case of a knife coater, or the combination of a roll and knife, in the case of a roll coater, has many advantages. Lint from the fabric, or coarse undispersed particles in the coating compound, will often cause scratches or other irregularities in the surface of the applied coating. The second knife tends to even out such defects, as well as produce a more uniform surface across the sheet. In such installations, the first knife or roller serves as a meter to determine largely the amount of coating applied and the degree of penetration, while the second knife controls the appearance and uniformity of the applied coating.

Brush coaters, whereby the coating is applied by a brush roll revolving against a supply roll, rotating in a pan of the coating compound (similar in principle to the simple roll coater), have been used for special surface effects. Some have, in addition, reciprocating brushes mounted above the surface of the coated cloth to even out the coating of the cloth while it is still wet.

In general, these are not practical for most uses because of the difficulty in cleaning the brushes and the rapid breakdown of the bristles by abrasion and because of the effect of slight variations in the viscosity of the compound on the amount picked up by the brush.

Special Tricks

In knife coating, the use of an edge-dam or ear is essential to keep the coating compound from flowing off at the edge of the fabric. These are formed to fit the angle of contour between the coating knife and the cloth. They are usually constructed so that they can be held in place by a hook that is slipped over the top of the knife, of sufficient weight that any force exerted by the compound bank in front of the knife will not move them out of place. They must be movable to accommodate various widths of cloth.

With the floating knife, if of sufficient weight, the edge-dam can be designed to sit on the bar in front of the knife without actually being attached to it. With this type, it is necessary to make a cut-out on the edge next to the cloth so that it can overlap the cloth slightly and still

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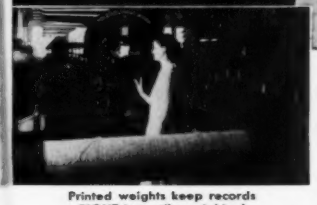

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Printweigh stops errors . . . provides *printed* weight records . . . assures you that the accurate indication of the Toledo dial will reach your accounting records without chance of human error. Prints *directly* in big, clear figures . . . on thick tickets . . . on large or small sheets . . . on strips . . . with extra copies. Saves time, stops losses, assures *accurate* weights *accurately* recorded! Send for bulletin 2021 on modern weight control. Toledo Scale Company, Toledo 1, Ohio.

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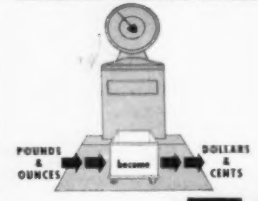


TOLEDO®

HEADQUARTERS FOR SCALES

permit the selvage edge to slide under it freely.

From the point of view of good housekeeping and safety, it is desirable, where space permits, to design a pan to place underneath the coating to catch any spillage or runoff that may occur.

Textile Equipment News

(Continued from page 150)

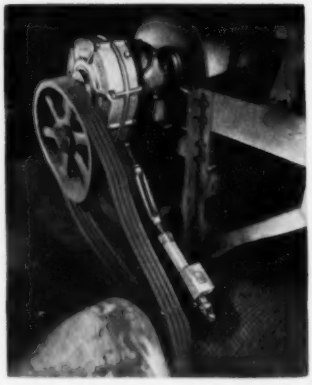
Shaft-Mounted Speed Reducer Has Large Speed Range

A new double-reduction shaft-mounted speed reducer with capacity to 43 hp., for output speeds from 12 to 110 rpm., has been announced by Dodge Manufacturing Corp., Mishawaka, Ind.

The new No. 7 reducer greatly increases the applications for Dodge torque-arm speed reducers. It has 59% greater horsepower capacity than the No. 6. It embodies the same advantages of dependability and economy that, according to the manufacturer, have won wide acceptance throughout industry for the distinctive torque-arm features.

Like previously announced models, the No. 7 is shaft-mounted and anchored with a torque-arm that fastens to any fixed object. A turnbuckle enables fast, easy adjustment of belt tension. Installation is simple and economical. There is no foundation to provide; no flexible couplings are needed.

The new No. 7 reducer brings the number of sizes in the Dodge torque-arm line to eleven—divided in two



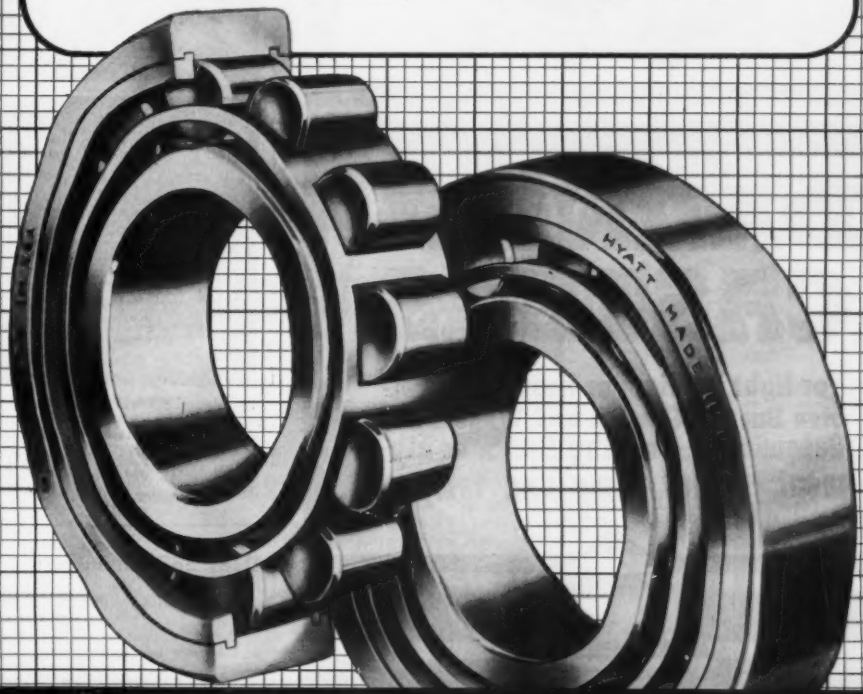
THE NO. 7 REDUCER here shown is mounted on a conveyor; Tri-Matic overload release is installed.

Specify "HYATT EQUIPPED" When You Order Looms

When you decide to make a substantial investment in new looms, it will pay you to make sure the specifications call for Hyatt Roller Bearings at vital positions—crank, cam, and rocker shafts, vibrating whip rolls, take-up rolls, yarn beam and pick shafts.

Hyatt Roller Bearings require less lubrication. Bearings are so sealed that cloth is kept cleaner. More efficient production is assured. Power is saved. Accuracy of bobbin or shuttle transfer is maintained. Less maintenance cost, as there is practically no bearing wear with Hyatts.

Not only in looms, but in all types of preparatory and finishing machinery, Hyatt applications have, for many years, proved to be good insurance on equipment investment. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.



HYATT ROLLER BEARINGS

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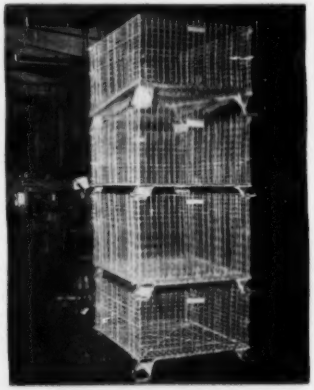
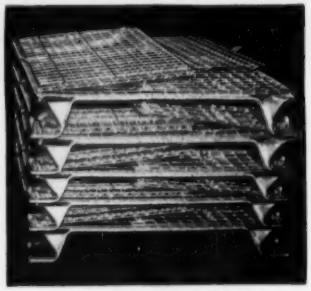
series, single- and double-reduction —with capacities from 1 to 43 hp., output speeds from 12 to 330 rpm. The new Dodge Tri-Matic overload release is applicable to the No. 7, as it is to all models in the Dodge torque arm line.

Collapsible Steel Containers Can Be Stacked or Folded





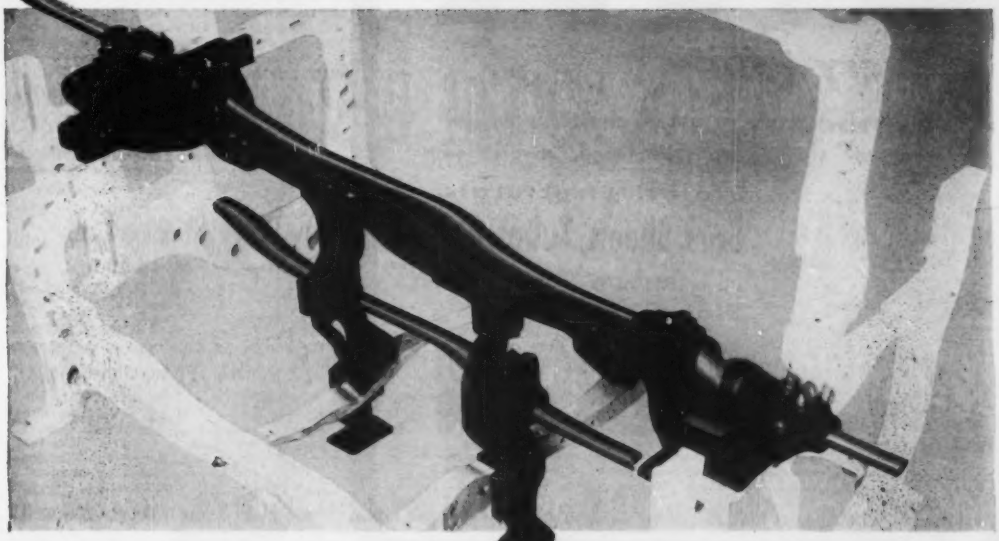
COLLAPSIBLE-TYPE STEEL "Cargotainers," made by Pittsburgh Steel Products Co., Pittsburgh 30, Pa., are easily stacked when folded or filled. They are designed for handling by forklift trucks, and are useful in inter- or intra-mill shipping of yarns, etc.

Dyes and Chemicals

(*Continued from page 152*)

8) fastness to light according to the depth of the shade has made this type of green, either alone or in combination, standard for use where fastness to light is important. Excellent (5) fastness to washing makes this green especially useful where materials are subject to repeated severe washing. Very-good-to-excellent (4 to 5) fastness to mercerizing caustic soda and to plissé printing permits use of this green on materials that are to be given an imitation-seersucker finish or that are to be mercerized subsequent to coloring. This dye is fast

BAHAN TOP GIRTS



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for the days of cost-saving ahead!

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• Allow faster operating speeds
• Improve quality of cloth
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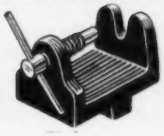
Meet increased competition head on with increased efficiency. Costs saved are profits made, and one of the best ways to make old looms produce more goods of a better quality is to install Bahan Top Girts. Thousands of these Top Girts are now in use on Model E, K, X and modified D looms, affording smoother, faster operation than ever before possible. Check the efficiency of your looms now. Compare their production with that of Girt-equipped looms. You can't afford to pass up the cost-saving possibilities Bahan Top Girts have to offer! Get the facts from Bahan today.

BAHAN TEXTILE MACHINERY CO., Inc.

GREENVILLE, SOUTH CAROLINA

Get this SHUTTLE VISE FREE!



LOOMFIXERS will find this shuttle vise comes in handy for removing eye and spring screws from shuttles. Saves time. Saves damage to shuttles. Get yours absolutely free. Fill in coupon and mail today.

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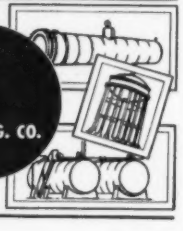

to water spotting (4 to 5), fast to hot pressing (5), and does not change shade in artificial light (5).

Yellow Vat Dyestuff Has Excellent Light Fastness

A new vat dyestuff under the trade name Indanthrengelb GCF Plv., suited for production of extremely clear yellow hues with a red tint, is available from Cassella Farbwerke, Mainkur, Frankfurt/M, Germany. The dyestuff has excellent fastness to light, and there is no photochemical decomposition of the fibers. As a result, the new dyestuff is particularly suited for material used in flags, draperies, and curtains, the company states.

Low-Viscosity Sodium CMC Aids Use as Dispersant

Carbose VL, produced by Wyandotte Chemical Corp., Wyandotte, Mich., is a new sodium carboxymethylcellulose. It has the lowest viscosity of any CMC on the market. Its properties may suggest use in textiles and other industries. Production is now being expanded to meet increasing demand. Carbose VL goes into solution rapidly and completely without forming heavy gels. It is useful where dispersing, suspending, stabilizing, adhesive, and film-forming properties are required, particularly where the undesirable thickening effect of other types of CMC must be avoided.

Wetting Agents

(*Continued from page* 131)

ferent chemical and mechanical surfaces to deal with. Furthermore, each of the fibers including cotton generally contains in practice extraneous material such as oils, waxes, and sizes. It appears obvious and it has been shown that the wetting properties of a particular solution of a wetting agent, with respect to cotton, must be different from those that would be shown with respect to other fibers. Nevertheless, many laboratories have been making the mistake of testing wetting agents that are to be used on rayon, wool, or fibers other than cotton, with one of the standard tests based on cotton.

We should try to relate tests made on cotton to cotton processing. If other fibers are to be processed, the wetting test should be based on these fibers.

What Is a Wetting Agent?

Any discussion of wetting tests requires clarification of what is meant by wetting agents. For the textile chemist, a wetting agent is a substance which when added to water or to a water solution will cause the solution to penetrate into fibers, or at least

The LOOM with RATIONALIZED DESIGN

Two types shown
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TORONTO, JUNE 2nd to 13th, 1952

(Remember the big success at the Atlantic City Exhibition, 1950 !)

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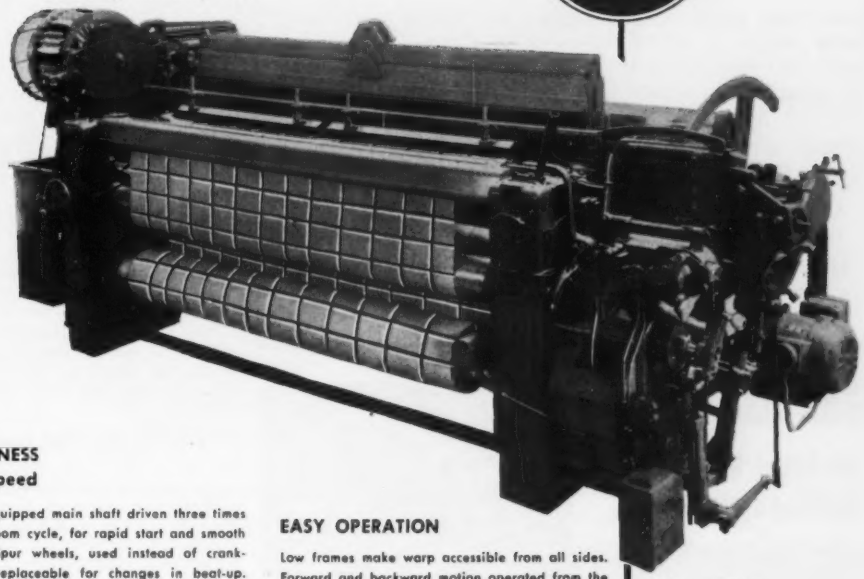
Established 1853



SMOOTHNESS at high speed

Fly-wheel equipped main shaft driven three times as fast as loom cycle, for rapid start and smooth operation. Spur wheels, used instead of crank-shaft, are replaceable for changes in beat-up. Double-wall frames assure great stability even when running at high speed.

ACCESSIBILITY

No parts requiring adjustment underneath the warp and no arch above, for ease and efficiency in fixing and cleaning. Main driving parts, needing no attendance, encased in the double-wall frames.

BUILT FOR LONG LIFE

Low center of gravity and scientific distribution of weight for minimum vibration and long life. Special parallel picking motion: Linkage, in place of shoe parallel motion, lengthens life of picker sticks and pickers.

EASY OPERATION

Low frames make warp accessible from all sides. Forward and backward motion operated from the same handle. All parts interchangeable without any adjustment, thanks to accurate manufacturing.

GREAT VERSATILITY

Standard loom frame for all loom types, widths, and kinds of raw material; loom designed on the principle of "box and bricks."

OTHER FEATURES

New positive shaft drive. No gear wheels for pick changing. Simple and reliable warp let-off motion.

HIGH EFFICIENCY

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1-4 shuttle automatic looms

pick and pick, pick-at-will looms (4-f shuttles)

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Versions for light, medium and heavy cloth

High speed single shuttle ribbon looms for universal use

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MODEL J BOM/b is a fully automatic flat power machine with 4 bars, 12 carriers for sectional work operating at 15 full courses in fine gauges over 60" needle bed space with high and low butt needles.

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cause the s lution to spread over the surface of fibers.

What Does It Do?

In many cases the wetting agent has another function. In addition to wetting alone, it may act as a dye-levelling agent, a detergent, an emulsifier, or it may do several of these things.

To simplify the discussion as much as possible, let us consider wetting agents only from the fiber-wetting or penetration standpoint. In this attempt at simplification, we still must deal with cotton, wool, viscose, acetate, nylon, silk, and all the other textile fibers. These fibers may exist as yarn, as fabric, as loose stock, or as felts. Yarn may be in skeins or in packages. F brics may be open, in folds, or in rolls. Complicating the matter still further, the wetting agent may do its work on these fibers in kiers, in tubs, on pads, on jigs, in boxes, or in many other types of apparatus. Penetration of the liquid into the fiber may take place with or without pressure. The liquid may be agitated or not. The time of contact between the liquid and the fibers may be a matter of seconds or hours. The process may require complete wetting or only partial wetting. Finally, wetting agents must do their work at various temperatures and pH. and often in the presence of various materials other than water alone.

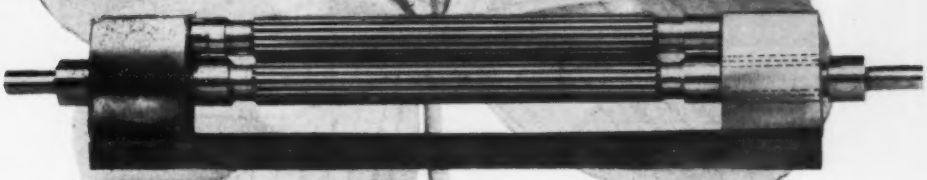
Tests Assume Too Much

With all of these many conditions, it is amazing that wetting tests, which of necessity could be based on only a few of these conditions, have been proposed and used and the assumption made that the results of these tests could foretell exactly how the wetting agent would perform in practice.

Let us assume that we are only interested in processing cotton and that the wetting tests that we are going to use will employ the particular cotton yarn or fabric that we will process in the plant. Certainly we are closer in our wetting tests to practical conditions, but we still have a long way to go. Many people have felt that by using yarn or fabric to be processed, the standard wetting tests would become an exact measure of what they could expect to obtain in actual practice. Unfortunately this is still not so.

In most textile treatments, complete wetting of the fibers is necessary; but the wetting tests in wide use today do not measure the time it takes to wet completely the particular yarn or fabric under study. These tests measure sinking times for incomplete

You're Lucky if Your Old Drawing Rolls Are Wearing Out



Ideal High Speed Ball Bearing Drawing Rolls*

Lucky because you can order Ideal Drawing Rolls as replacement parts and get almost twice as much production per frame, save on operating costs, and produce better quality yarn. Accurate records kept on hundreds of Ideal roll units prove this beyond question. Ideal ball bearing spacing units prevent wear, misalignment, and unequal tension between rolls. They permit continuous high speeds which were formerly considered impractical.

On Ideal units the weight is carried on the spacing unit housings instead of on roll necks and the shaft runs freely on ball bearings. This cuts power consumption way down and assures smooth, quiet action at any speed.

Ideal fluted sections are 10½ inches wide to operate with the conventional 6 to 10 ends up at back, or from laps 18 ends up, and can take 9 inch laps direct. They are hardened and ground for better crimping action and to prevent nicking, burring, lap-ups, and work stoppages.

Ideal High Speed Ball Bearing Drawing Rolls are far superior to anything else you ever used. Investigate their great advantages before you replace your next worn drawing rolls.

Ideal Industries, Inc.
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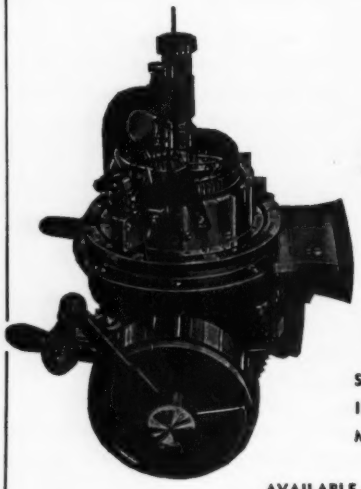

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GEORGETOWN HARLEY-KAY-MARSLAND LTD. ONTARIO

ESTABLISHED 1906

CANADA

wettings, which may range from 50% to 90% of completeness, depending on the particular test used.

Check Sinking Time vs. Several Concentrations

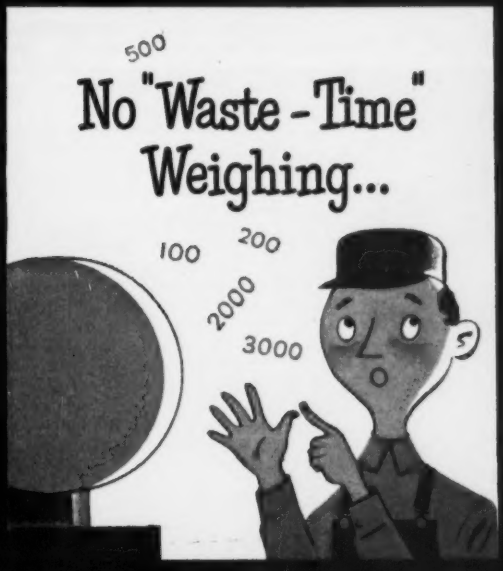
Suppose one wetting agent causes a sinking time twice that of another agent in a particular wetting test. Does that mean that the first will also cause complete wetting more rapidly? The answer is no. Several workers have shown that even with only one wetting agent, a higher concentration may take longer for complete wetting of a skein than a lesser concentration even though the lesser concentration takes longer for initial wetting. If such conditions apply to a single wetting agent, how much more is the chance for error in evaluating the practical efficiencies of two different wetting agents by the usual wetting test?

Don't Ignore Production Conditions!

And what about the solution containing the wetting agent? Such factors as hardness, pH, amount and type of dyestuff, other chemicals, and temperature, can be controlled. We can actually approach closer to practical conditions by adding the wetting agent directly to a portion of the solution in which it will be used. We can even add the wetting agent in the same concentration as would be used in the plant. In some cases, however, even the last is not satisfactory. Our wetting tests give reproducible sinking times only within a particular range of concentration for each wetting agent. There are practical conditions where the wetting agent is used in such a dilute concentration that no satisfactory sinking times could be obtained with the usual wetting tests.

Make Wetting Curves Your Guide

It has been shown by several workers that each particular wetting agent changes its speed of wetting at a particular rate with change in concentration. This rate of change, or to say the same thing, the slope of the wetting curve, is a constant for each particular wetting agent, regardless of the test method. Conditions of temperature and pH must be constant, of course. We can also state that while two different wetting agents may have the same sinking times at one particular concentration in a particular wetting test, they must show different sinking times from each other at a different concentration in the same test, or at the same concentration in different tests. As a second correlary we can say that if two wetting agents are exactly the same chemi-



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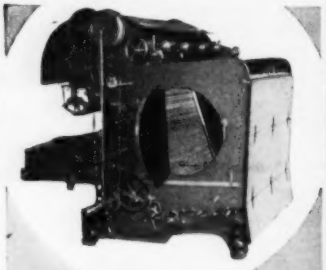

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TEXTILE WORLD

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cally, the slopes of their wetting curves will be the same. But when we say chemically the same, we do not mean that all commercial sodium soaps or all alkylarylsulfonates have exactly the same wetting-curve slopes. Even the slightest difference in chemical nature or in the amount and type of impurities may affect the slope of the wetting curve.

Using the various wetting tests, it has been common practice to evaluate wetting agents one against another on a cost basis. This evaluation has been done by plotting the sinking times of the wetting agents against their concentrations and then reading off from these plots the concentrations required to give a standard sinking time—usually 25 sec. Such comparisons are only valid in the very rare cases in which the wetting agents are identical chemically. In all the other cases, exact relative-cost figures cannot be obtained. These wetting-test results coupled with the slope of the wetting curves can give a qualitative picture, however.

Finally, we must consider the use of wetting tests in comparing wetting agents that are chemically different. Here we are in a bit of trouble. No absolute recommendations can be given, as only qualitative results can be obtained. A few suggestions can be given, however, and these are: The sinking-time curves must be determined for each of the wetting agents by one of the several wetting-test methods. In no case can the sinking time at only one particular concentration be of value. The curves are then examined. If the curves are not too greatly different in slope, then rough comparison can be made. In all other cases, however, where the slopes are more than slightly different, we can obtain some idea of the relative sensitivity of the two products so far as concentration change is concerned.

Don't Be Fooled—Use Your Data

In the case of a certain dyehouse that was doing package dyeing of cotton yarn, the packages were wet in an open tank separate from the package-dyeing machine. The dyeing cycle in this plant was approximately 6 hr., so that there were several hours available for the packages to stand in the wetting solution. To economize, low concentrations of a wetting agent were used. If the wetting solution were tested by the Draves method or by any of the other wetting tests, no satisfactory sinking times would be obtained, yet the dyer was obtaining satisfactory wetting in his plant as evidenced by the excellent dyeing.

This dyer was interested in exam-

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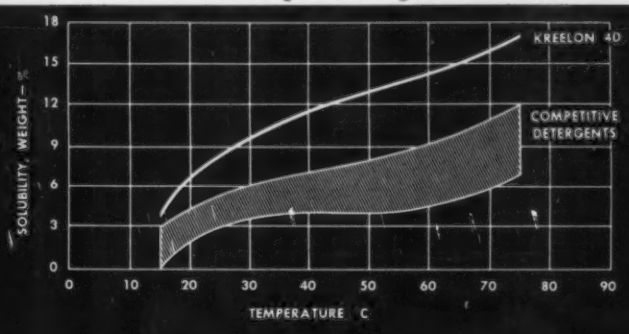

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ing other wetting agents for possible savings; so he made wetting tests with one of the standard methods in the higher concentration ranges where good sinking times could be obtained. He found that on these tests a particular new wetting agent gave a 25-sec. sinking time at one-half the concentration required to give the same sinking time with the wetting agent that he had been using. Since the price of the two wetting agents were the same, here was a chance, he thought, to save money. When he tried the new wetting agent in the plant he was puzzled to find streaky dyeings that could only be improved by using the new wetting agent in a concentration three times as great as he had to use with his regular wetting agent. He had neglected one important factor in the examination of his test data—the slopes of the wetting curves!

If he had examined the slopes of the wetting curves of the products he tested, he would have noted that the product that appeared to offer savings showed a much steeper wetting curve than the product he had been using. This curve would have indicated to him that the new wetting agent had a tendency to fall off very rapidly in wetting at low concentrations. Therefore, it most likely would not be as satisfactory as the one he had been using.

Apply Data To Conditions

How then can we make use of wetting tests, and how can we get some really practical information? The answer is that we can always get some useful information from wetting tests, but how useful this information can be must depend on the particular conditions at hand.

Wetting tests are particularly useful as methods of control in many processes. For example, suppose we have a continuous process wherein a wetting agent must be kept at a particular concentration. Once a wetting curve has been plotted for this particular wetting agent, in the bath, by a particular test method, then all we need do to determine the concentration of wetting agent at any time is to run a test on the solution. By reference to a previously prepared graph we can read off the exact concentration. This method is applicable, of course, only in those cases where the wetting-agent concentration in the solution is high enough to give reproducible sinking times in one of the test methods.

We can use a single wetting test to determine whether the bath contains the proper amount of the wetting agent. If not, we can either di-

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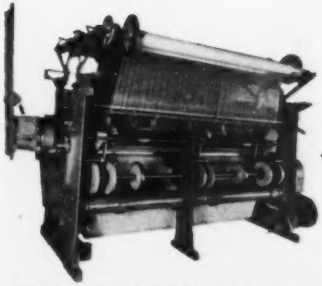

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lute the bath or add more wetting agent until the wetting test gives the desired figure. Many other cases will, of course, come to mind where wetting tests can be used for similar purposes. A note of caution must be given here. If we use a different wetting agent, we cannot assume, when we obtain wetting-test results that have proven satisfactory for the former wetting agent, that the bath is automatically in a satisfactory condition with the new wetting agent.

Buy With an Eye to End Use

The buyer has often purchased the wetting agents that appeared the cheapest according to particular test methods rather than according to the practical results that could be obtained. We must keep in mind that it is not the test method that dyes the goods or gives the finish, but a particular process in the dyeing machine, pad, or in some other piece of equipment.

In conclusion it must be said that all of this discussion has taken something from the value of wetting tests. The unreliability of wetting-test data for predicting practical performance in most cases, has been pointed out. There must be something to put in its place. The answer is: each of us should make the particular practical process wherein we use wetting agents our main test basis. Let each dyer and chemist evaluate wetting agents, not in terms of sinking times, but in terms of actual practical results.

Scrap Drive. NPA has pointed out frequently in the last few months that the nation needs scrap badly. New sources of supply must be found, and textile mills are suggested as possible repositories of old machinery, obsolete layouts, old trucks or dinkies, and "iron bars" that may be just lying around waiting for a "rainy day." NPA points out that one ton of outside scrap will furnish the raw material needed to complete 4 tons of steel. The other three fourths of the material used in steel making is a combination of pig iron and steel-mill scrap. All textile mills are urged to cooperate in getting their scrap back into circulation.

Data Not To Be Revealed. A recent Defense Department directive outlines what information may not be made public by "military-goods" manufacturers. Included in the prohibitions are: (1) production or delivery schedules, (2) sources, quantities, movement, and storage of critical supplies, (3) security measures set up, (4) re-

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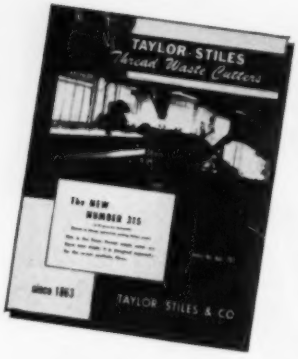

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This folder describes the new Taylor-Stiles #315, #411, and #415 thread waste cutters. These cutters are specially designed for efficient cutting of synthetic yarns in lengths from 1" to 24" at high production rates.

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search and development contracts, (5) photos, sketches, and models, (6) material shipped to Allied governments, (7) plane and vessel movements, (8) indication of single source of supply, (9) and indication of a prime contractor's requirements quantitywise or dollarwise in the case of the subcontractor.

Handling Spun Synthetics

(*Continued from* page 121)

method. Ends are broken out and run through, the frame is cleaned, bottom and top clearers are picked, and the new lot is creeled. Bottom and top clearers are picked at each doff on both back and front.

Flyer Speed on Slubbers Was Cut 18%

In slubbing, Dixie has some new 9x4½ Whitin 135-spindle frames, some 8x4 Whitin Woonsocket frames, and some 9x4⅛ H&B frames. All are equipped with Whitin Superdraft and have the cradle that makes the frames suitable for rayon or cotton. The H&B frames can take up to 1⅞-in. staple, and the others handle fibers from 1¼ to 2 in.

The bottom rolls are 1¼ in. throughout. Synthetic rubber rolls are used on top. Settings for the 3rd and 4th rolls are ⅜ in. over the staple length. From cradle to front, the setting leaves just enough room for the plastic compressor to fit between the apron and the roll.

Flyer speed was reduced 18% from the standard for cotton in order to keep the front-roll speed as low as possible with the low twist multipliers used for synthetics.

The slubbers are creeled with the carriage down. Splices are run up into the rolls, and the frame is then doffed so that the piecing will be on the bare bobbin.

Flyers are picked on the doff and half doff. At the doff, both lines of flyers are laid up, spindle tops are picked, and the carriage is cleaned. Rolls are picked twice each week. Bottom and top clearers are picked every doff, and the bottom spindle is picked once in 8 hr. The creel is wiped every 8 hr., too, and it's a constant job to keep the head and foot ends as clean as Dixie's quality demands. Backs are cleaned twice a week, heads once a week.

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We made our stripper-pipe chain longer so that the grinder won't have to climb up on top of the cards to fasten the nozzle when the cards are being set up for grinding. *Avondale Sun*

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By MILTON A. LESSER

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Diammonium phosphate.....2 lb.
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Saturate the cloth with this solution, allow to dry, and then coat with

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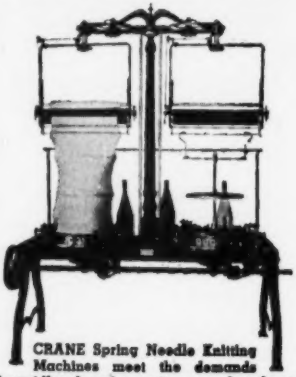

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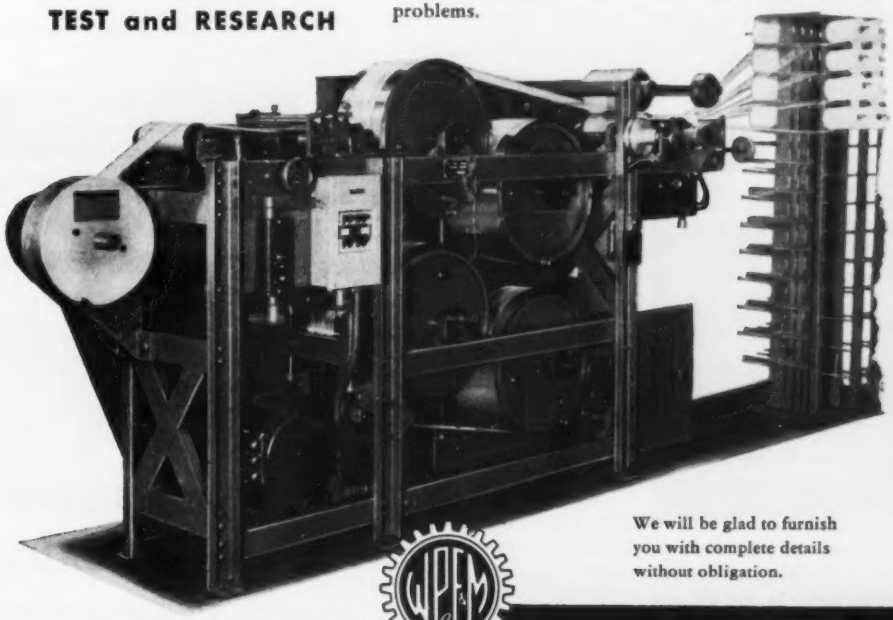
From the stainless steel size box through the four 8" face electrically-heated drying cylinders to the head end, essential controls and adjustments are provided for all phases of operation.

At reasonable initial cost and low operating expense, this new, versatile Slasher answers many small-run slashing problems.



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three layers of the following mixture:

Casein	100 parts
Water	400 parts
Glycerine	130 parts
Ammonia solution (25%)	10 parts

Aside from industrial applications, fireproofing treatments are of importance in the manufacture of other types of fabrics, including tenting, protective coverings, and other products used by the armed forces. Treatments based upon borates, phosphates, and related compounds are frequently benefited by inclusion of glycerine. In using a boro-phosphate resin as a flameproofing agent, for example, the addition of glycerine not only cuts down loss of the agent on exposure, but also gives softer and more tacky films.

Glyceryl bori-borate resins are promising newcomers to the fabric-treating field. One of them, made by adding triethanolamine to the product formed from the condensation of boric acid, borax, and glycerine, is described as not only an excellent fire retardant, but also as a useful sizing agent, lubricant, and adhesive.

The addition of glyceryl borate has been recommended as a means for overcoming certain undesirable characteristics in halogenated, i.e. chlorinated, rubber. After modification with this glycerine compound, the rubber composition is said to be particularly well suited for impregnating cotton bases to quench afterglow, to make flexible and fireproof awnings, and to produce fire-retardant curtains for many applications.

Useful Alkyd-Resin Intermediate

Alkyd resins have taken an important place in processes for rendering fabrics resistant to mildew and rot. In the early stages of World War II, mildew destroyed one-fifth of all fabrics shipped to the South Pacific. Various treatments with alkyd resins were the most effective measures for preventing damage from such attack. One typical antimildew composition for treating textiles calls for:

Copper 8-hydroxy quinoline	9.5 parts
Modified alkyd resin	11.4 parts
Chlorinated biphenyls	19.0 parts
Ammonia	5.7 parts
Mineral spirits	163.4 parts
Water	171.0 parts

The alkyd employed in this formulation is a linseed-oil fatty-acid-modified glycerine-phthalic-anhydride resin. Water repellency can be imparted by adding wax emulsions.

Alkyd resins have long been used to make fabrics that are impermeable to fluids because they have the advantage of producing clear, colorless films that do not yellow on aging

WATER TREATING PROBLEMS?

The efficiency of N-Sol activated silica coagulating processes has answered the problem for many for either raw water or waste water treatment. N-Sol produces water with the sparkle of spring water. Write for Use File 52-19.

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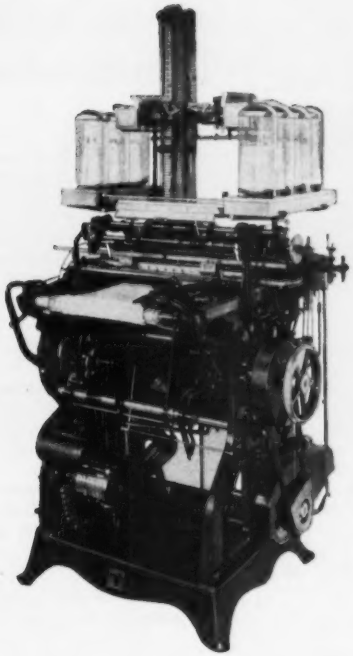

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and that are free of objectionable odor. Alkyds have also assumed importance in compositions for flameproofing fabrics or for imparting fire-resistance to them, and for improving the wear resistance of asbestos garments.

Compositions containing these resins were recently introduced that provide a number of desirable effects in one treatment. One is in the form of a stable oil-in-water-type emulsion, suitable for the simultaneous deposition on fabrics of mildewproofing, fire-resisting, afterglow-preventing, coloring, and binding materials. An alkyd of the drying oil-modified type, alone or in combination with an amine-aldehyde resin, may be used as the binder.

Principal advantages of these alkyd resins are that they can be emulsified and also converted to an infusible solid state by the action of heat or by oxidation on exposure to air. Besides these factors, they wet out pigments and bind them to cloth. Regarded as a major advance in textile technology, the methods for decorating fabrics with resin-bonded pigments are constantly being modified and improved. Many of the fabrics prepared for the armed forces are benefited by the use of these modern methods.

These last examples are products in which both the physical and chemical properties of glycerine figure. Being an aliphatic alcohol with three hydroxyl groups, glycerine is capable of entering into a number of reactions to yield an almost unlimited number of valuable compounds. Of these, none is equal to alkyd resins in importance and versatility. Chemically, these resins are combinations of a polyhydric alcohol with a polybasic acid, plus suitable modifying agents. Phthalic anhydride is the most important acid in this type of reaction, and glycerine is by far the most commonly used alcohol. More glycerine goes into the production of alkyd resins than into any other application.

Glycerine-containing alkyds find their greatest use in the production of a wide variety of tough, durable, and beautiful paints and enamels. By suitable modification, however, they can be made to meet the needs of many other industries, including the manufacture of textiles. Even before the war, glyceryl-phthalate alkyds had established themselves in textile treatments; wartime needs and scarcities proved their value and adaptability beyond any question.

Alkyd Coatings Useful, Diverse

Some idea of the way in which the alkyds served the armed forces was

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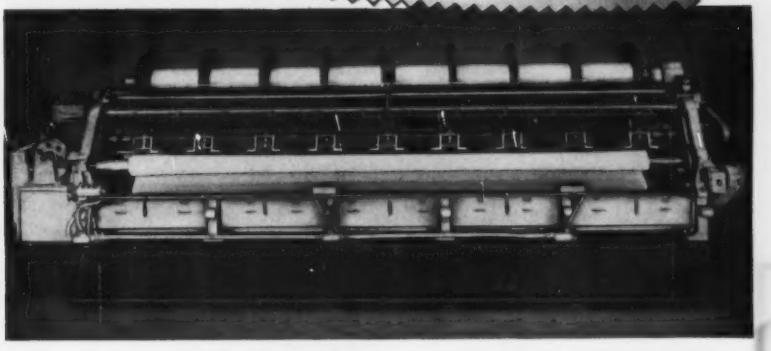
Makes Quality Fabrics at HIGH SPEED!

Left end of machine showing enclosed gear box, pattern mechanism, motor and controls.



Right end showing continuous let-down and take-up.

. . . the NEW Kidde-Aveco Tricot Machine

You'll get improved quality in your fabrics . . . and turn them out *fast* on the Kidde-Aveco High Speed Tricot Machine.

A mechanical continuous let-down replaces the brakes for controlling beams. A new continuous take-up replaces the ratchet take-up. And . . . to minimize the periods of acceleration and deceleration, there's a high starting torque motor equipped with a quick stop. You'll find these improvements reflected in elimination of shade marks, reduction of stop marks so that they usually dress out, and in improvement of fabric quality.

Why not consider the Kidde-Aveco machine in your expansion plans? Write for complete information.

CHECK THESE FEATURES:

✓ **NEW CONTINUOUS LET-DOWN.** Easy to set and maintain because it's mechanical. Eliminates shade marks, reduces stop marks and improves fabric quality.

✓ **NEW VARIABLE SPEED DRIVE.** A turn of a hand wheel varies machine speed. No chain drive . . . no gears to be changed . . . quieter operation. Tachometer included.

✓ **NEW CONTINUOUS TAKE-UP.** Quality is established by a simple turn of adjustment screw. No gears or sprockets to be changed. No clutch. Once set, it requires no adjustment.

✓ **OTHER FEATURES.** These include improved plunger design, improved front guide bar lifting mechanism, quick-stop and jogging control.

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given in a report on textile coatings by Owens,[1] a special consultant to the Quartermaster Corps. Listing the alkyds first among the most important coating materials then in use, he pointed out that the principal military uses for coated fabrics that may be adaptable to commercial uses, are balloons, pontoons, hospital sheeting, tents, tarpaulins, and other protective covers; raincoats, ponchos, garment interlinings, adhesive tapes, pre-doped airplane fabrics, and mechanical fabrics, such as diaphragms. He noted that the oil-modified alkyds, valued principally for their gas resistance, were used to make a number of protective materials and garments.

In a similar vein, Whitescarver[2] remarked that it was an additional tribute to the versatility of the alkyds that, under critical war-time conditions, "very satisfactory" coated fabrics could be made with these resins. Of all the materials used as a replacement for rubber, the alkyd resins of the oxidizing type consistently showed the best mustard-gas resistance. They were usually plasticized with other types of alkyd resins to give added flexibility and resistance to cracking when the cloth was folded at low temperatures.

Of related interest was the use of an alkyd resin, made with glycerine and modified with unsaturated fatty acids, in a coating composition for canvas tent cloth. Designed to meet the exacting requirement of the Military Planning Board, the coating composition not only imparted waterproofness to the fabric, but contained ingredients that made it flameproof and fungus-resistant as well. In addition, the fabric remained flexible at sub-zero temperatures. This treatment would be an ideal method for extending the life and usefulness of tarpaulins.

Continued work has served to extend the usefulness of the alkyd resins in textile treatments for both civilian and military uses. For example, the ability of alkyd resins to impart mustard-gas resistance to fabrics is the subject of a recent patent[3] covering modified glycerine-sebacic-acid alkyd resins. Aside from their obvious military applications, these alkyd-treated fabrics may also be used for raincoats, shower curtains, cable wrappings, and other purposes.

Plasticizer Use Emphasized

The importance of waterproof fabrics is well appreciated. Even though glycerine is fully miscible with water, it often serves as the plasticizer in the production of waterproof and water-resistant finishes for textiles. In traditional processes for treating test materials like canvas and drill, glycerine serves as the plasticizer for the insolubilized gelatin films of impregnants used to provide waterproofness. In waterproofing processes using other types of materials, glycerine similarly helps to maintain flexibility or impart other desirable characteristics.

The softening and plasticizing action of glycerine is an important consideration in the formulation of many fabric finishes and other textile-treating compositions. These and other characteristics were called into use by those concerned with the problem of providing protection against poison gases—a problem that has not been lessened with the introduction of "nerve" gases, for example. One method, suggested during World War II, for protecting foods from mustard gas and lewisite was the use of gelatin films plasticized with glycerine as interlayers in tarpaulins of laminated-cloth structure. Studies carried out in Europe showed that glycerine and glycerine-gelatin mixtures are almost impermeable to mustard gas. Various other processes for poison-gasproofing of fabrics, including one employing a coating of nylon, have made use of glycerine.

Properties Aid in Dyeing Procedure

That glycerine could meet these varied demands stems from its rare combination of useful properties. Because of its action as a solvent, suspending medium, hygroscopic agent, thickener, dispersant, and penetrant, glycerine finds frequent use in dyeing processes. Such properties were called into use when the Nylon Task Committee issued its report on revised nylon-dyeing formulas.

The Nylon Task Committee found that acid dyes answered the requirements of the Quartermaster Corps and were capable of yielding a shade of O.D. No. 7 which in comparison with the best combination of acetate dyes was considerably faster to washing and at least as fast to light. For the dyeing of 3-oz. nylon oxford, the following padding formula was recommended:

Alizerol Orange 3R	2 lb., 12 oz.
Fast Acid Brown RG	1 lb., 11 oz.
Alizarin Cyanone Green GN Extra	1 lb., 1 oz.
Fast Wool Cyanone 3R	1 lb., 2 oz.
Glycerine	20 lb.
Shellac	2 lb.
Ammonia, concentrated	1 lb., 2 oz.

Bibliography

[1] Owens, J. R.: Paint Ind. Mag. 59:162, 1944.

[2] Whitescarver, W. F.: in Mattiello's "Protective and Decorative Coatings," Washington, Office of the Quartermaster General, 1945, pp. 90-4.

[3] Pockel, I.: U. S. Pat. 2,481,532, 1949.

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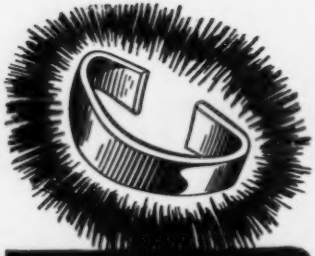

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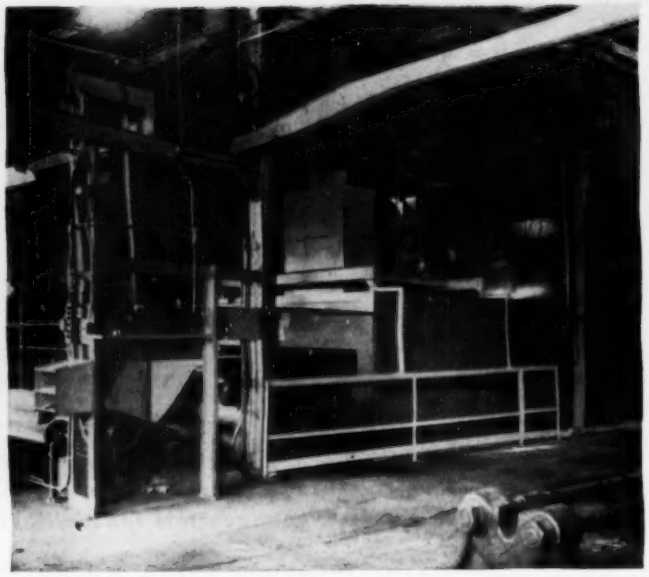


HIGHER SPEED AND MORE UNIFORM tensioning were gained by Textileather Corp. by installing this 125-ft. tenter designed by company engineers.

Textileather Raises Tenter Production 140%

By A. KLINE

A NEW MACHINE for the framing and tentering of cotton fabrices that will increase production about 30% has been installed in the Toledo Dye Works Div., Textileather Corp., Toledo, Ohio.

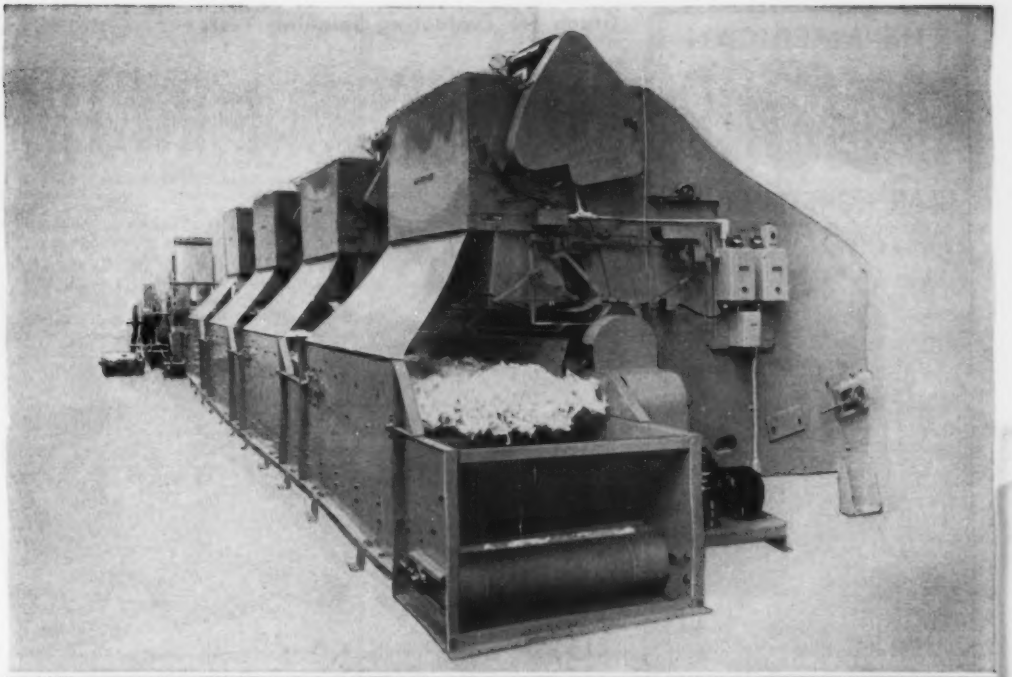
The machine, a clip tenter frame, is about 125 ft. long, of modern design, and believed the first of its kind in the textile industry. Designed by Textileather Corp. engineers, it was built by H. W. Butterworth & Sons Co. The ovens were fabricated by Ross Engineering Co. The machine is designed to apply finishes, dry fabrics under tension, give the fabric a smooth surface, and remove the wrinkles.

In the finishing operation, the first step is to apply the desired finish, which may be any one of the following: sizing, mildew, fire or water-resistant treatments. In addition to these finishes, there are many other finishes that may be applied to the fabric by using this new tenter frame.

While on the frame, the cloth passes through a series of three ovens where it is dried into shape. The machine is so devised that the distances between the two sides can be adjusted to the width of the cloth and can be varied so that the cloth can be stretched to any desired width while drying .

Final stage of the machine operation is a winding device, which, while winding the cloth into huge rolls, governs the lengthwise tension during the operation.

The ovens are gas fired and are designed for even and speedy drying of the cloth. The cotton fabric is run through the new machine at 120 yd. per min., as compared to a former speed of 50 yd. per min. Textileather engineers said the increase in the speed of processing the cloth is the result of the higher temperatures available in the ovens.



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Fiber blending as done by the automatic systems that Proctor engineers have developed and installed in all types of mills is so thorough and accurate that in many cases the variance in the blend is less than 1%.

Whether the system is semi or entirely automatic depends entirely upon individual mill requirements. In any event a Proctor system is always designed to assure the fibers being well mixed . . . the mix being properly proportioned and proportion remaining the same throughout the run. In this way the last yarn made from the mix is identical with the first.

This accuracy is especially important in the blending of synthetics—a practice in such wide use today.

The system illustrated is one recently installed by Proctor engineers. It consists of several weighing feeds with skewing aprons set over a constantly moving long apron which feeds to a picker.

Over the last twenty years Proctor engineers have designed blending systems for most of the leading textile mills in the United States. Their experience has won for these systems a place of undisputed leadership. When you have a mill problem involving blending two or more fibers—you'll find it will pay to call on Proctor engineers immediately.

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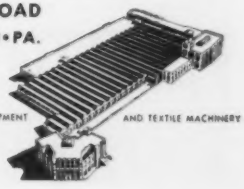

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Graph for Evaluating Spinning Tests

(Continued from page 117)

it is enough to say that there are many factors occurring in a confounding manner.

Such conditions always produce what is known as chance occurrences. In this respect, the coincidence of several irregular factors can be compared to the operations of a slot machine. Two, three, four, or more independent things must line up before the combined effort results in a broken end.

As long as all the factors remain constant, we can expect the average rate to remain unchanged and the pattern of chances to conform to general laws. Conversely, if the average rate changes or the pattern of chance varies, we can be reasonably sure that percentages of some of the factors have changed also.

Actual frequency of end breaks per spindle (Fig. 2) resembles the theoretical frequencies that are predicted in Fig. 3. Note that some spindles produce for 100 hr. or more without a single break, while others may have as many as 8, 9, 10, or more breaks. The skew in the actual data indicates there are spindle differences

If you prefer to use 1% limits instead of the 3% used in the graph, you can make a similar chart. The value of "t" is then 2.56. For 5% probabilities, you can use Fig. 1 and multiply significant differences by 2/3.

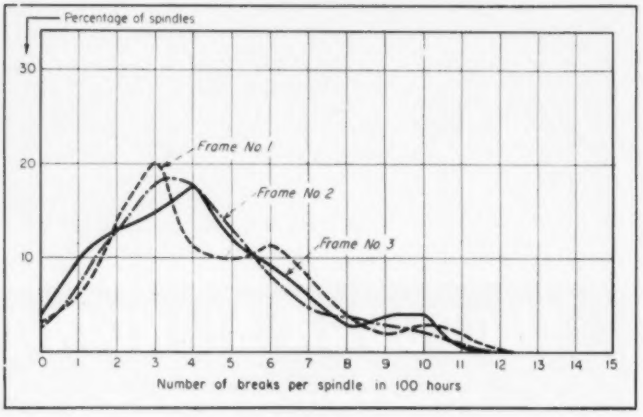

Percentage of spindles
30
20
10
Frame No 1
Frame No 2
Frame No 3
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Number of breaks per spindle in 100 hours

FIG. 2

Actual Frequency of End Breaks (100 hr. of continuous spinning)

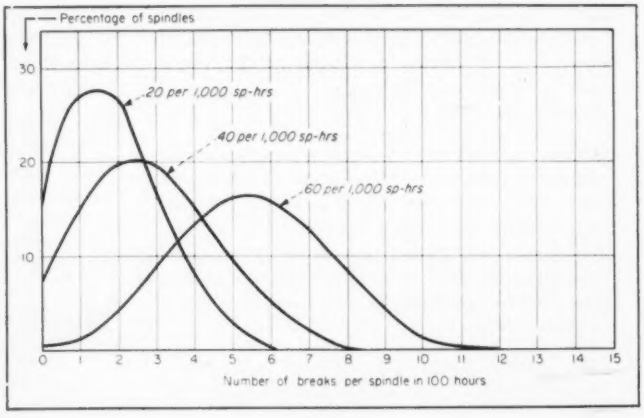
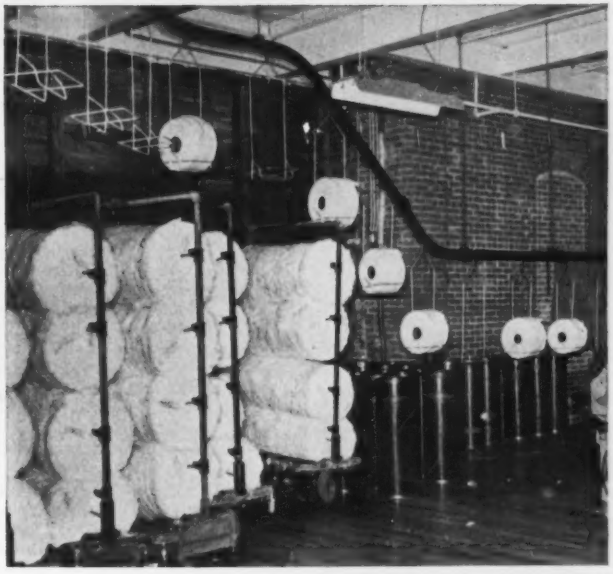

Percentage of spindles
30
20
10
20 per 1,000 sp-hrs
40 per 1,000 sp-hrs
60 per 1,000 sp-hrs
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Number of breaks per spindle in 100 hours

FIG. 3

Theoretical Frequency of End Breaks (100 hr. continuous spinning)

SIMILARITY OF THESE CURVES indicates how closely the theoretical frequencies of end breakage resemble the actual data. Some spindles produce for 100 hr. or more without a single break.

Get over the handling bottleneck



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DIAL THERMOMETERS

News OF THE MONTH

Wool Seminar at Lowell. Details on the various phases of the International Wool Research Project that were discussed in the three-day seminar at Lowell Textile Institute, Lowell, Mass., last month included a comparison of wools of similar types obtained from different geographical areas, the development of new laboratory techniques for physical-property evaluation, the chemical evaluation of wool fibers by means of cystine counts, the effect of rest (aging) and steaming on fiber breakage, and the effect of wool diameter and steaming on dye shades.

Among the new wool-analysis procedures developed by the three-year project are a method of determining the effective cross-sectional area of single fibers through measurement of vibrational frequencies by means of a vibroscope and an integrator, wool-structure studies by means of X-ray diffraction and infrared absorption techniques, stress-relaxation measurement to study the reaction rates of various chemical changes in wool, and rapid mechanical statistical procedures that give answers to the mass of data obtained from the tests.

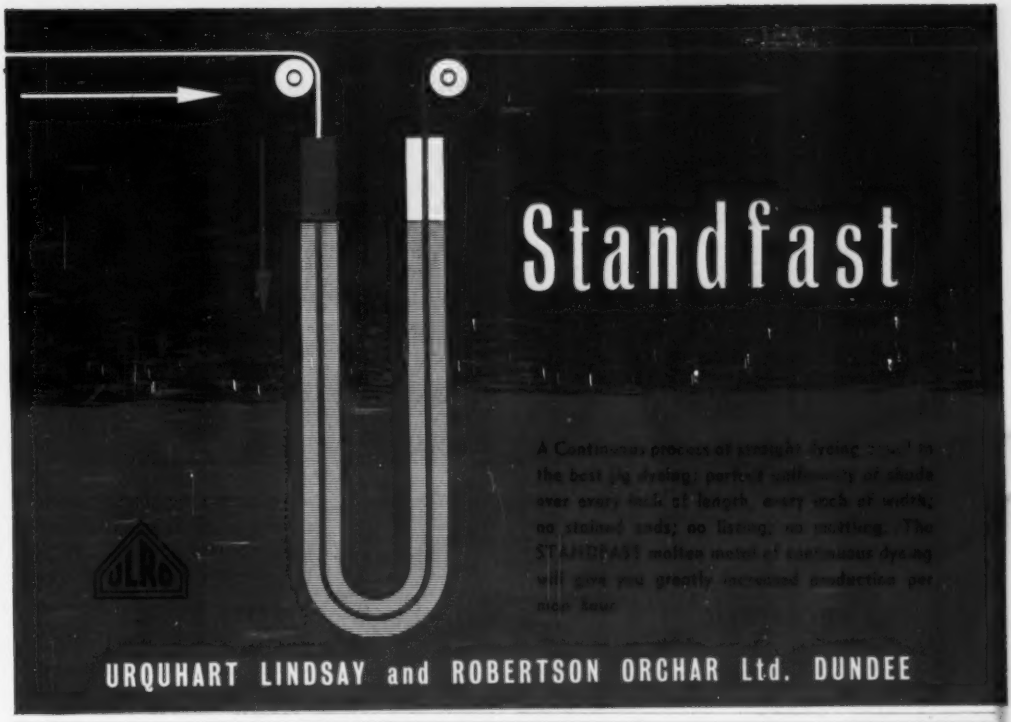
Over 100 scientists and mill executives from several countries attended the sessions. They learned among other things on a practical mill level that the average diameter of a wool lot is a very important factor in the efficiency of the drawing, combing, spinning, and dyeing operations.

President Gives Green Light. Removal of credit restraints from State and municipal financial programs has been authorized by President Truman over the objections of the Federal Reserve Board, anxious to control inflation more closely, and of large segments of the primary textile industry, anxious to preserve the value of their physical-property investments. Previously, proposed State and municipal financing plans had to be approved by regional voluntary credit-restraint committees of the Federal Reserve Board, but under the new presidential directive State and local plant-financing schemes are exempted from Reserve Board review and approval. A boom in plans to float industrial bond issues, backed by public funds, so as to finance the construction of new plants is expected in many industry-hungry areas.

Engineering Tricot Fabrics. Tricot fabrics can be engineered more accurately if the following principles are kept in mind, Ralph L. Stimmel of Textile Research Dept., American Viscose Corp., reported at the April meeting of the American Assn. of Textile Technologists in New York:

1. Courses per inch on the machine are not the same, as a rule, as when the fabric is off the machine and relaxed.
2. A change in length of one runner, as a rule, changes the courses per inch of the fabric off the machine.
3. If Point No. 2 does not hold true, then the runner-length change will be reflected in the wales per inch.
4. More courses are produced with short runner totals; but as runner totals increase, the diminishing of courses does not take place proportionally.
5. Ratio affects courses and wales per inch in still undetermined magnitudes for different-length runner totals.
6. More courses in general strengthen a fabric, but not proportionally.
7. Each individual amount of yarn run-in per rack has its own ratio for optimum strength.
8. Decreased runner lengths give a lower yield, but not proportionally.
9. Each individual amount of yarn run-in per rack has its own ratio for optimum gray yield.
10. A change in one component of a tricot fabric affects all the other components.

Chemical-Society Fiber Symposium. Newer synthetic fibers are being brought along rapidly for military, industrial, knitted-fabric, and woven-fabric uses—and in many uses have definite advantages over natural fibers—chemists and fiber technicians were told at the recent semi-annual meeting of the American Chemical Society at the Hotel Statler in Buffalo, N. Y. The use of dynel in pile fabrics for military wear in the Arctic regions was discussed by John Malik of George W. Borg Corp. A review of industrial uses of the newer synthetic filament and staple yarns was given by Henry S. Grew, Jr., of Wellington Sears Co. There is a wide-open field for newer man-made fibers in knitted-fabric



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NEWS *of the Month*

(Continued)

manufacturing, Frederick F. Huback of Princeton Knitting Mills held. Blankets and curtains are a good field for the newer fibers, Gerard K. Lake of Pepperell Mfg. Co. said, but cotton will remain supreme in the sheets and pillowcase business for a long time.

Cotton and viscose were stoutly defended by L. K. Fitzgerald of Dan River Mills and J. B. Goldberg of J. P. Stevens & Co., acetate by A. M. Tenney, wool by Werner von Bergen of Forstmann Woolen Co., and silk by William Kilborne of William Skinner & Sons.

Cellulose-Acetate Modification. The characteristics of cellulose acetate in certain respects could be considerably improved, D. D. Gagliardi, director of product development at Warwick Chemical Co. told the Western New England Sect., AATCC, at a recent meeting at Shelton, Conn. For instance, the acetone solubility could

Textile Calendar

Phi Psi Fraternity, annual convention, Clemson House, Clemson, S. C., May 1 to 3, 1952.

AATCC, Hudson-Mohawk Sect., Jack's Restaurant, Albany, N. Y., May 2, 1952.

AATCC, Western New Eng. Sect., Ladies' Night, Cheshire, Conn., May 2, 1952.

AATCC, Southeastern Sect., Columbus, Ga., May 2, 1952.

British Industries Fair, Earl's Court and Olympia, London; and Castle Bromwich, Birmingham, England; May 5 to 16, 1952.

4th International Lighting Exposition and Conference, Cleveland Auditorium, Cleveland, Ohio, May 6 to 9, 1952.

AATT, monthly meeting, Builders Club, New York, May 7, 1952.

National Assn. of Wool Manufacturers, annual meeting, Waldorf-Astoria Hotel, New York, May 8, 1952.

ACMI, annual convention, Haddon Hall, Atlantic City, N. J., May 15 to 17, 1952.

Carolina Yarn Assn., annual outing, Carolina Hotel, Pinehurst, N. C., May 15 to 17, 1952.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., May 16, 1952.

AATCC, Northern New Eng. Sect., Andover Country Club, Andover, Mass., May 16, 1952.

Paris Fair (Foire de Paris), Port de Versailles, Paris, France, May 17 to June 2, 1952.

American Society for Quality Control, annual convention, Onondaga County War Memorial, Syracuse, N. Y., May 22 to 24, 1952.

Textile Institute, annual conference, Assembly Hall, Edinburgh, Scotland, June 2 to 6, 1952.

AATT, monthly meeting, Builders Club, New York, June 4, 1952.

AATCC, Northern New Eng. Sect., annual outing, Merrimac Valley Country Club, June 6, 1952.

AATCC, Southeastern Sect., annual outing, Radium Springs, Ga., June 6 and 7, 1952.

AATCC, Piedmont Sect., Ocean Forest Hotel, Myrtle Beach, S. C., June 6 and 7, 1952.

STA, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 12 to 14, 1952.

AATCC, council meeting, New York, June 13, 1952.

AATCC, general research committee meeting, New York, June 13, 1952.

AATCC, Philadelphia Sect., outing, LuLu Temple Country Club, North Hills, Pa., June 13, 1952.

AATCC, Midwest Sect., Lake Lawn Lodge, Delavan, Wisc., June 14, 1952.

Gordon Research Conferences, AAAS, Colby Junior College, New London, Conn., June 16 to Aug. 29, 1952.

AATCC, Western New Eng. Sect., outing, June 20, 1952.

AATCC, New York Sect., outing, June 20, 1952.

AATCC, Hudson-Mohawk Sect., Jack's Restaurant, Albany, N. Y., June 20, 1952.

ASTM, annual meeting, Hotel Statler, New York, June 23 to 27, 1952.

American Oil Chemists Soc., short course in soaps and detergents, Rutgers Univ., Brunswick, N. J., July 6 to 11, 1952.

AATT, monthly meeting, Builders Club, New York, Sept. 3, 1952.

7th National Chemical Exposition, Coliseum, Chicago, Ill., Sept. 9 to 13, 1952.

Fiber Society, fall meeting, Princeton, N. J., Sept. 10 and 11, 1952.

AATCC, Piedmont Sect., Hotel Charlotte, Charlotte, N. C., Sept. 12 and 13, 1952.

AATCC, Southeastern Sect., Atlanta, Ga., Sept. 13, 1952.

Third Canadian Textile Seminar, Queen's University, Kingston, Ont., Sept. 11 to 13, 1952.

AATCC, council meeting, New York, Sept. 19, 1952.

AATCC, general research committee meeting, New York, Sept. 19, 1952.

NACM, annual meeting, Portsmouth, N. H., Sept. 25 and 26, 1952.

AATT, monthly meeting, Builders Club, New York, Oct. 1, 1952.

AATCC, Western New Eng. Sect., Rapp's Restaurant, Shelton, Conn., Oct. 3, 1952.

17th Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 6 to 11, 1952.

Beltwide Cotton Mechanization Conference, San Joaquin Valley, Calif., Oct. 22 to 24, 1952.

AATT, monthly meeting, Builders Club, New York, Nov. 5, 1952.

AATCC, national convention and dyeing and finishing exposition, Hotel Statler, Boston, Mass., Nov. 6 to 8, 1952.

AATCC, council meeting, Boston, Mass., Nov. 6, 1952.

AATCC, general research committee meeting, Boston, Mass., Nov. 6, 1952.

AATCC, Western New Eng. Sect., Rapp's Restaurant, Shelton, Conn., Nov. 14, 1952.

AATCC, monthly meeting, Builders Club, New York, Dec. 3, 1952.

AATCC, Northern New Eng. Sect., annual meeting, LTI, Lowell, Mass., Dec. 6, 1952.

AATCC, Western New Eng. Sect., Rapp's Restaurant, Shelton, Conn., Dec. 12, 1952.

1953

22nd AMA National Packaging Exposition, Navy Pier, Chicago, Ill., April 20 to 24, 1953.

Natl. Assn. of Hosiery Mfrs., annual convention and conference, Claridge Hotel, Atlantic City, N. J., April 27 and 28, 1953.

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., April 27 to May 1, 1953.

AATCC, national convention, Stevens Hotel, Chicago, Ill., Sept. 17 to 19, 1953.

1954

American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, Atlantic City, N. J., April 26 to May 1, 1954.

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Reduced Costs? **Yes!**

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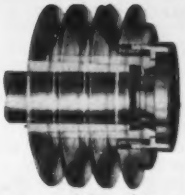

The American Double-Taper Adjustable-Speed Drives permit textile men to improve quality, increase production and reduce costs because they make it possible to get just the right speed at both low first-cost and low maintenance cost. Vibration, fretting corrosion and freezing are eliminated. The secret of the operating advantages of these drives is in the double-taper hub construction of American Adjustable-Diameter Sheaves. These double-taper hubs are made up of tapered bushings which make the sheaves easy to mount and dismount and tapered sleeves which lock all flanges into "solid", trouble-free sheaves. Send the coupon below for complete information on these new unique drives.

American *Individual Cotton Card Drives*

These modern card drives give textile mills all the advantages of improved quality, increased production and reduced cost demanded by today's market. They make possible more efficient plant layout, better lighting, improved air conditioning and better all-around plant "housekeeping". Improved quality and increased production are possible because these drives eliminate line shafting and permit a 20% variation in speed for each individual card. First cost is low because the drives are simple, consisting of a single-reduction helical-gear unit, an adjustable-speed V-belt drive, and a unique centrifugal clutch, all driven by a standard motor with standard controls. The drives are easy and inexpensive to install and nest compactly in the card arch with no floor obstructions and ample aisle clearance. Mail the coupon below for the facts on these modern Individual Card Drives.

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American *Econ-o-matic Spinning Frame Drives*

These drives eliminate belt slip because the motor mounting is designed so that the reaction torque of the motor automatically adjusts belt tension to the load. High starting tension for heavy starting load—normal running tension for normal running load.

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Shaft-mounted American Reduction Drives give you any speed below 154 r.p.m. They are easy to install, are quiet and trouble-free. They are available with the unique American Torque-arm Overload Release which provides instantaneous mechanical protection for both machine and drive in case of jam or shock loads.

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- ☐ Reduction Drives
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NEWS *of the Month*

(Continued)

be decreased, and likewise the ironing temperature could be raised when modification increased the fusion temperature of the cellulose acetate, the speaker said. Crease-resistant characteristics of cellulose acetate have also been found to be improved upon modification. The modification in this case is an addition to the ester of a free hydroxyl group. Higher tensile strength and greater elastic recovery are noted in such cases. In certain instances modification can be achieved by the use of existing equipment.

ASTM Committee D-13 Doings. The word "catenon," based on the Latin for "chain," has been suggested as a generic term for man-made fibers to Committee D-13 of the American Society for Testing Materials. (Merchandisers and retailers are reported uninterested in the word because it lacks customer appeal.) The word "estron" has been voted out of the ASTM manual as a name for fibers produced of cellulose acetate. The term "Tex" has been approved as a standard for universal yarn numbering, as the term "Grex" had been previously endorsed.

The following changes are contemplated in the ASTM hosiery snag test: Changing the present 200-g. weight to 50 g. for better correlation of results, and using sandpaper with more uniformity, probably of the double-zero type. The task group on pilling has reported that the following definition of pilling had been decided upon: "The formation of rolls or balls of tangled fiber on the surface of the material, consisting of some part or all of the fibers in the body of the fabric."

Pressure Dyeing With Sulfur Colors. When high-pressure dyeing sulfur colors on yarns, especially heavy shades and blacks, a dyehouse chemist should watch whether the dye is being taken up properly. Alexander P. Roy, superintendent of dyeing and finishing at Dean & Sherk Co., Inc., Lawrenceburg, Ky., told a recent meeting of the Philadelphia Section of AATCC. The dye takeup is adjustable through the amount of sulfide and salt used. To retain better the sulfur color in its leuco compound and thus produce better affinity to the fiber, replace about a quarter or one-third of the sodium sulfide with a mixture of caustic soda and glucose, the speaker said. Sulfur colors can be boiled out and dyed in a one-bath operation with the use of a good penetrant and the addition of Calgon (about 1% to 100 lb.) to the liquor. This helps break up any precipitation of the dye, along with metallic salt, on the surface of the yarn.

Dislocation or Free Competition? A delegation of New England cotton and rayon mill manufacturers recently urged the Surplus Manpower Committee in Washington to allocate a proportionate share of government contracts to the New England area on the basis of the more widespread layoffs in that part of the country. The group was headed by William F. Sullivan, president of the National Assn. of Cotton Mfrs. of Boston, Mass. At the same time Charles C. Hertwig, president of the American Cotton Mfrs. Institute of Charlotte, N. C., told the same committee that the textile industry wishes to fight its way out of the present depression "under its own steam" without either "coddling" or "intervention" on the part of the government.

The NACM group pointed out that loss of working hours in New England during the past year have been three times as heavy as in the South. employment is down over 25%, half of the workers are either laid off or working only part time, payrolls have fallen at a rate of $50,000,000 in that time, and 25,000 workers have exhausted their unemployment-compensation benefits. It held that contracts should be allocated proportionate to an area's capacity to produce the fabrics required.

The ACMI head said that the basic principles of free competition on which the American economy is founded are in danger of being sacrificed by such a government policy, and in addition questioned the value of a program that "by shifting business from one area of unemployed to another of unemployed would merely reduce unemployment in one area and increase it in another."

German Acrylic Fiber. "Pan," a polyacrylonitrile fiber that has exceptional "firmness" and durability against atmospheric influences, has been developed and patented by Cassella-Farbwerke-Mainkur in West Germany. The new fiber is the result of research dating back to 1934 in the former I. G. Farben plants at Wolfen and Mainkur. "Pan" will be offered to German mills in both filament and staple form. Pilot-plant runs of the new "elastic" and warm-to-the-hand fiber have been completed, and pro-

(Continued on page 296)

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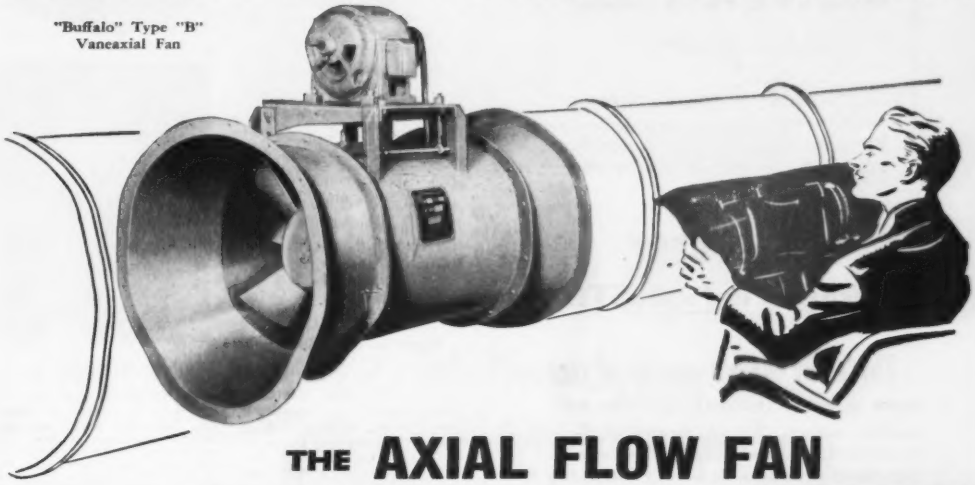

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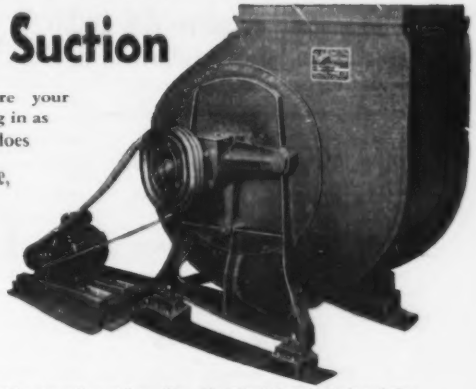

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NEWS ABOUT Suppliers

Equipment Suppliers

William Allen Son's Co., Worcester, Mass., has appointed Frederick S. Waite sales manager of the firm. A graduate of Brown, Mr. Waite has for the past two years been plant superintendent.

Atlantic Steel Co., Atlanta, Ga., is constructing a $500,000 warehouse and office building for its warehouse division in Atlanta. The increased facilities will accommodate the increased production expected from the company's new electric furnace.

Bagley & Sewall Co., Watertown, N. Y., has discontinued its New York office. Joseph S. Scheuermann, vice president, and Thomas N. Carter, director of engineering, have resigned. Since resigning, Mr Scheuermann has passed away.

Robert Gair Co., Inc., New York, has acquired the American Coating Mills division of Owens-Illinois Glass Co. American Coating Mills Corp. is now a wholly owned Gair subsidiary. John D. Mullins is now sales manager of the Boston corrugated-box division of the Gair firm.

Hemphill Co., Pawtucket, R. I., has elected James McDowell to the newly created office of vice president in charge of the Southern territory. He was formerly Southern sales director, located at High Point, N. C. Eugene St. Pierre has been elected vice president in charge of research and development of the firm.

John Hewson Co., New York, has opened an eastern Pennsylvania, Delaware, and southern New Jersey office at Ambler, Pa. Frederic T. Hults has been appointed district manager for the tri-State area.

R. E. L. Holt, Jr. & Associates, Greensboro, N. C., has made known that J. B. Adams, formerly with Greenwood Mills, has joined the organization as a sales representative in western South Carolina and Georgia.

DAVID S. WILLIAMS, for the past few years executive vice president of Graton & Knight Co., Worcester, Mass., has been elected president of the firm, succeeding his father, Arthur A. Williams, now chairman of the board. The company is said to be the world's largest manufacturer of industrial leathers.

Holyoke Machine Co., Holyoke, Mass., has appointed Frank S. McQuillan, a graduate of New Bedford Textile Institute and a former member of the technical-service staff of Textron, Inc., to service the textile industry for its calender-roll division.

Industrial Products of America, Inc., Paterson, N. J., has moved into offices at 140 Market St. that are three times the size of its previous headquarters.

Link-Belt Co., Chicago, Ill., has elected Robert C. Becherer president, succeeding George P. Torrence, retired under the company retirement plan. Mr. Becherer joined the company in 1923 and was most recently executive vice president. Mr. Torrence continues to serve on the executive committee.

Mount Hope Machinery Co., Taunton, Mass., has appointed Miles Sampson to its engineering force. Mr. Sampson's former position was plant engineer at Mount Hope Finishing Co., North Dighton, Mass., until the finishing plant closed down recently.

Taylor-controlled piece dye kettle at Perry Knitting Company, Perry, N. Y.

WARNING

This Piece-Dyeing Control is HABIT-FORMING

The Perry Knitting Company, back in 1950, bought one of these Taylor Piece Dye Kettle Controls. Results were so good, the piece dyeing so level, that they got the habit and have since equipped all their kettles. And the Taylor Control habit has meant consistently uniform dyeing at lowest cost—a habit well worth having.

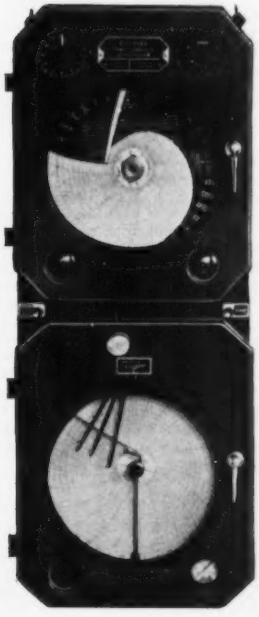
Piece dyeing, package dyeing, beam dyeing, skein dyeing or top dyeing can be automatically Taylor-controlled according to fully adjustable time and temperature schedules. And this Taylor control will save you money at least four important ways:

1. **By assuring uniform dyeing conditions.**
2. **By cutting operating costs.**
3. **By preserving quality of dyed fabric.**
4. **By eliminating expensive human error.**

Operator pushes a start button and FUL-FLEX Time Schedule Controller, left, takes over. Then (a) steam enters dye kettles. (b) Rise rate, hold temperature, hold time are controlled according to pre-determined schedules. (c) Precise dyeing temperatures are held during entire cycle. Signal lights indicate various stages of cycle.

Taylor FUL-FLEX* Time Schedule Temperature Controller for piece dyeing, package dyeing, beam dyeing, skein dyeing, top dyeing.

*Trade-Mark



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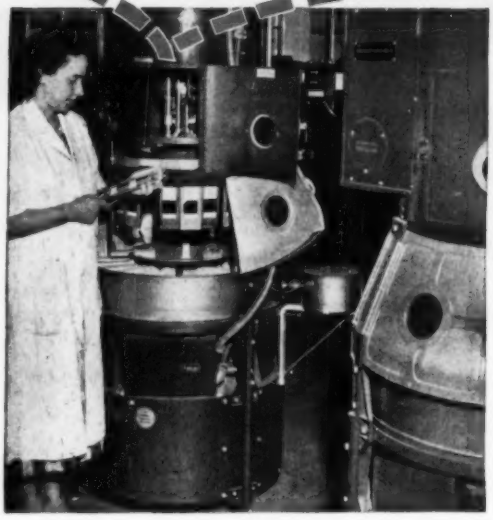

Atlas Fade-Ometers and Launder-Ometers are in constant use in the modern laboratories of the Burlington Mills Corporation, serving two important functions — quality control and progressive research.

To assure unvarying quality in daily production, fabric samples from each phase of processing are subjected to exhaustive tests in Fade-Ometers and Launder-Ometers. These tests help to determine color fastness, bleeding, shrinking, and resistance to washing and mechanical action. Samples that fall short of the high Bur-Mil standard result in rejection of the entire lot.

Bur-Mil designers, also, use these Atlas-Ometers when experimenting with new fabrics. Because the Fade-Ometer so accurately duplicates the deteriorating effects of sunlight, and the Launder-Ometer the effects of commercial laundering, designers can ascertain in the laboratory whether fabrics will withstand actual use satisfactorily.

The machines are adaptable to a wide range of products. They are simple to operate, and may safely be left in continuous, unattended operation.

ATLAS ELECTRIC DEVICES COMPANY
361 West Superior St., Chicago 10, Ill.

WEATHER-OMETERS • FADE-OMETERS • Llaunder-OMETERS

News About SUPPLIERS (Continued)

MALCOLM D. SHAFFNER (left) has been appointed executive vice president of Saco-Lowell Shops, Biddeford, Me. With the company since 1933, Mr. Shaffner was formerly vice president, treasurer, and secretary. ROBERT M. JONES (right) has been named vice president in charge of research and development of the machinery firm. He was previously chief engineer.

Rodney Hunt Machine Co., Orange, Mass., recently coordinated its five product divisions under B. M. Jones, newly appointed general sales manager. H. F. Creegan succeeds Mr. Jones as manager of the textile-machinery division.

Southern States Equipment Corp., Hampton, Ga., is constructing a new 25,000-sq.ft. addition to its present facilities. Of steel and masonry construction, it is scheduled for completion in the fall.

Thompson Textiles, Inc., Charlotte, N. C., is the new corporate name of the former A. J. Gocking Co., Inc. Business continues under the same officers as before, at the same address.

Union Special Machine Co., Chicago, Ill., recently elected William S. North president and general manager of the company, succeeding A. M. Sheldon, now chairman of the board. Mr. North, a grandson of the founder of the company, joined Union Special in 1935.

Watson & Desmond, Inc., Charlotte, N. C., has been formed to handle textile-mill properties and used machinery. It shares offices with the partnership Watson & Desmond, which continues as formerly to handle textile mill supplies and accessories. Marion "Footsie" Woods has joined the latter organization as a South Carolina representative. He will work out of Greenville.

Whitin Machine Works, Whitinsville, Mass., has acquired that portion of H & B American Machine Co., Pawtucket, R. I., that relates to the manufacture of textile machinery and repair parts. Unfilled orders for repair parts on the former H & B books are being taken over and completed by Whitin, direct from Whitinsville as soon as possible.

Winsor & Jerauld Mfg. Co., Providence, R. I., has opened a Southern division at Charlotte, N. C. Albert J. Cole is manager of the new facilities.

Worthington Corp., Harrison, N. J., is the new name of the former Worthington Pump & Machinery Corp. No corporation policies or practices will be affected by the name change. C. K. Hood, manager of the New York sales office, has been made a vice president. W. J. Van Vleck succeeds Mr. Hood in New York; C. W. Kramer succeeds Mr. Van Vleck in the Atlanta, Ga., sales office; I. W. Leggett has been appointed manager of the Charlotte, N. C., branch office.

Chemical and Yarn Suppliers

American Cyanamid Co., New York, has appointed J. M. McNamee sales representative for the industrial-chemicals division in Georgia and Florida. With the company for two years, he will operate out of Atlanta, Ga.

Curtains, tarpaulins, flame shields, airplane cloth, laboratory aprons and many other applications can be woven of Fiber·Glass. Continuous-fiber textile yarns of 150 series have a tensile strength of 250,000 pounds per square inch, and withstand temperatures up to 800°F.

New markets, extra profits with Fiber·Glass textiles

Growing demand for strong Fiber·Glass fabrics creates new, profitable textile markets

ADD FABRICS woven of L·O·F Fiber·Glass to your present line and open up new markets. Your sales opportunities are almost unlimited; more and more applications are demanding textiles with the outstanding properties of fibrous glass.

Textiles made from L·O·F Fiber·Glass yarns combine a number of selling advantages. They will not shrink, sag, mildew or rot. In addition, they are fire-resistant and are unaffected by most acids, corrosive vapors and oils.

Whether or not you are already using fibrous glass for textiles, you can look to Libbey·Owens·Ford as an important source for top-quality Fiber·Glass. L·O·F is ready to offer you the services of its varied technical facilities.

If you'd like technical data, or want to talk about uses of Fiber·Glass in industrial and other fabrics, call the nearest L·O·F office (district offices in 24 major cities). Or get in touch with Libbey·Owens·Ford, Dept. F·G 1752, Nicholas Bldg., Toledo 3, Ohio.

L·O·F FIBER·GLASS

LIBBEY·OWENS·FORD GLASS COMPANY
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FIBER·GLASS

For more information, write direct or use Reader Service post card.

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Use the

NASH "79" QUILL POLISHER

to relacquer worn quills

You need not discard your old loom bobbins because they are worn or have slight surface imperfections. They can be sanded smooth, and re-coated with finishing material.

If your quills are in good condition, the conventional way of using the Nash No. 79 with steel wool pads, special polish and burnishing pads will produce a perfect surface finish, preventing filament breakage or transfer of dirt to the yarn.

Failure of the finish coat calls for a complete refinishing operation on the body of the quill, and the Nash relacquering attachment was developed to meet this need.

Lacquers 30 to 35 Quills Per Minute

With the relacquering attachment just developed for use with the Nash No. 79 Quill Polisher, you can apply a new coat of Lacquer or else a shellac and oil finish—automatically at 30 to 35 bobbins per minute. The attachment is easily attached or removed.

Write for descriptive material on the Nash No. 79 Automatic Quill Polisher and Relacquering attachment.

J. M. NASH COMPANY

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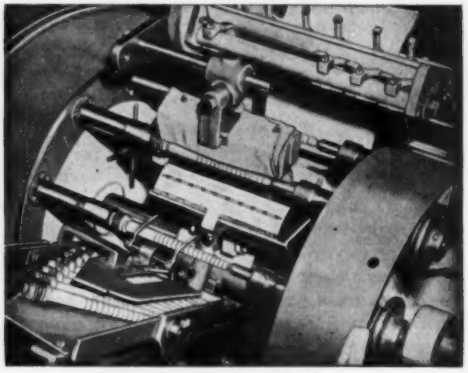
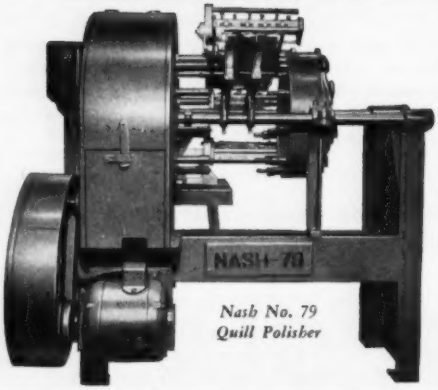
Close-up of Relacquering Attachment





Nash No. 79 Quill Polisher

News About **SUPPLIERS** (Continued)

WILLIAM N. DULANEY was recently named manager of the Southeastern sales office of A. E. Staley Mfg. Co., Decatur, Ill. The territory sales office is in Atlanta, Ga. Daniel S. Miller, supervisor of the company Atlanta package-sales department, is now assistant manager in charge of package-product sales.

LEWIS W. THOMASON, JR., has been appointed Southern district manager of New York & New Jersey Lubricant Co., New York, with his headquarters in Charlotte, N. C. With Cannon Mills at Kannapolis, N. C., for over 17 years, he was most recently superintendent of synthetics.

American Polymer Corp., Peabody, Mass., has appointed Leonard Shapiro manager of its textile division. One-time assistant to Prof. E. R. Schwarz at M.I.T., he was successively research director for Interlaken Mills, Warwich Chemical Co., Alrose Chemical Co., and Synthron, Inc.

American Viscose Corp., New York, has established a new sales division for the distribution of rayon tire yarn, tire cord, and tire fabrics. Frank T. Williams heads the new division. Norman A. Cocke, Jr., has been made assistant district sales manager, and Masten R. Dalton has been made district head of staple sales, at Charlotte, N. C., office.

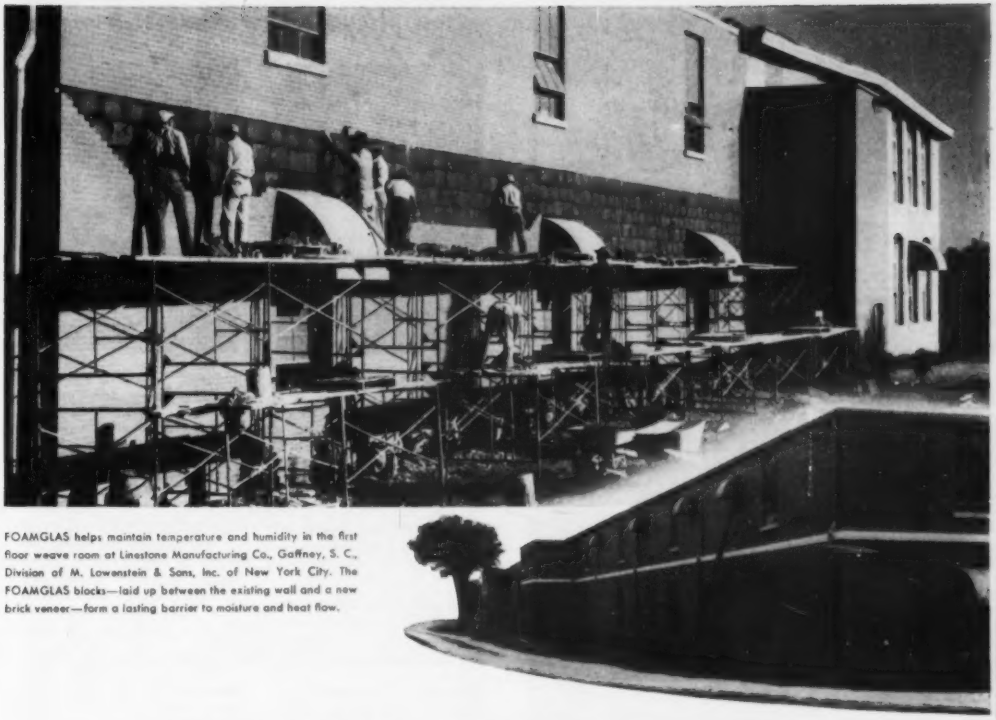
Chemstrand Corp., Decatur, Ala., has appointed three production supervisors for Acrilan manufacturing: Cole Downing, Robert J. Larson, and Adin A. Nellis, Jr. Three recent appointments to the research and development center of the corporation are S. Jack Davis, formerly with Calloway Mills; Frank B. Lutz, recently with Millville Mfg. Co.; and Charles H. Apperson. At the Chemstrand nylon plant at Pensacola, Fla., the following four appointments have been made: Dr. C. W. Gaylor, technical superintendent; L. E. Dequine, Jr., plant manager; Louis F. Ray, superintendent of intermediates; and Paul W. Runge, chief chemist.

Ciba Co., New York, is rapidly nearing completion of its new plant at Toms River, N. J., for which ground was first broken three years ago. Production at the new plant should be under way before the end of this year.

Commonwealth Color & Chemical Co., New York, has engaged H. W. Firsching as a regular member of its New York sales staff. Mr. Firsching was formerly superintendent of dyeing at Montgomery Mills, Inc., Montgomery, Pa.

Dexter Chemical Corp., New York, has acquired Lake Chemical Corp. as a Dexter division, including rights to all former Lake trademarks and tradenames. The new division plans to add a textile line of processing agents to those formerly offered by Lake.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has opened a district sales office for Orlon acrylic fiber in Philadelphia, Pa. Fred C. Allen is district sales manager in charge of the office. W. T. George is now also working out of the new office. Dr. Howard W. Swank has been made production manager in the manufacturing division for Dacron polyester fiber. Dr. Albert A. Smith has been appointed director of the Carothers Research Laboratory of the textile-fibers department. Joseph Deinet, one of the few remaining pioneer anthraquinone vat-



FOAMGLAS helps maintain temperature and humidity in the first floor weave room at Linestone Manufacturing Co., Gaffney, S. C., Division of M. Lowenstein & Sons, Inc. of New York City. The FOAMGLAS blocks—laid up between the existing wall and a new brick veneer—form a lasting barrier to moisture and heat flow.

Improving weaving weather

● Makes no difference whether you're processing natural or synthetic fibers, you've got to control temperature and humidity to produce high quality yardage.

Another way of saying the same thing is to recommend that you insist on an effective money-saving insulation . . . FOAMGLAS.

Mill owners have learned in the last few years the important advantages that come from installing FOAMGLAS on roofs and ceilings, in walls, under floors and on piping and process equipment. FOAMGLAS "cellulates" air — traps it in millions of glass chambers to give you dead air, man's best-known insulation material!

FOAMGLAS stays "good as new" because it's glass —and glass isn't bothered by moisture, vapor or fumes. The cellular construction gives it high compressive strength, too.

Send in the coupon for facts about FOAMGLAS and how it can help you in your mill. Write today.

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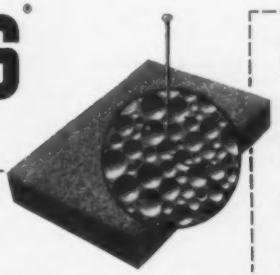
The *best* glass insulation is cellular glass. The *only* cellular glass insulation is FOAMGLAS. This unique material is composed of still air, sealed in minute glass cells. It is light weight, incombustible, verminproof. It has unusually high resistance to moisture, chemicals and many other elements that cause insulation to deteriorate.



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Please send me, without obligation, a sample of FOAMGLAS and your FREE booklets on the use of FOAMGLAS for: Normal Temperature Commercial, Industrial and Public Buildings ☐. Piping and Process Equipment ☐.

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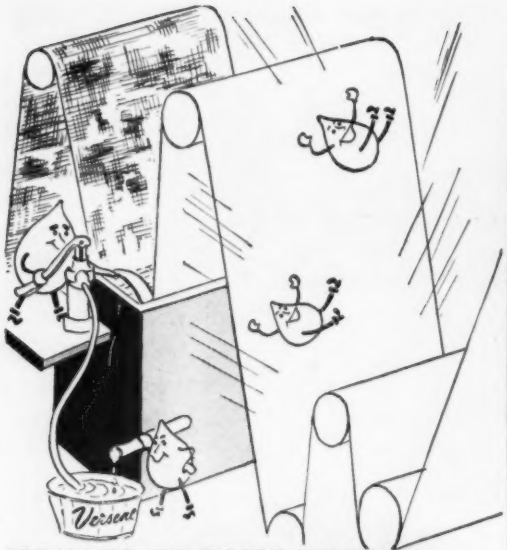

HOW TO PROCESS TEXTILES WITH ...Versene*

WHY VERSENES* SHOULD BE USED

The Versenes may be used in the wet-processing of textiles — woolens, cottons, rayons, synthetics and blends — *to improve quality, prevent spoilage, shorten processes or to eliminate certain operations.*

WHEN TO USE THEM

To prevent the deposition of, or remove insoluble soaps from textile fibers — to give a good "hand" and assure level dyeing • To overcome the effects of metal contamination in dye baths • To solubilize stearate soaps • To increase detergency and act synergistically with synthetic soaps • To efficiently complex iron in any caustic solution (Versene T) • In Kierboiling (Versene T) to increase whiteness and prevent iron stains and pinholing • In Mercerizing (Versene T) to produce a whiter thread or fiber • In Peroxide Bleaching add Versene to extend life and action of peroxide in bath and on fabric as well as to greatly reduce scale problems on equipment • In Rayon manufacture to give whiter yarn.

WHAT THEY ARE

Versenes are a great and growing family of powerful organic Chelating Agents. They control cations in solution by keeping them in soluble complex form. They are stable at high temperatures throughout the pH range. Unduplicated in uniformity of quality and complexing power, they are made only by the Bersworth Chemical Company under processes originated, developed and patented by F. C. Bersworth. Available in wet or dry form, they invite investigation. Send for Technical Bulletin No. 2. Ask for samples. Write Dept. D. Chemical Counsel on request.

VERSENE* WATER TEST KIT. Tells Total Hardness in 2 minutes. Accurate to 1 grain per gal. Versenate method. Complete with instructions $3.00 Postpaid.

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Dallas — Houston — New Orleans — St. Louis — Tulsa — Oklahoma City — Wichita — Barada & Page, Inc.

News About SUPPLIERS (Continued)

LOUIS S. GRAICHEN has joined the textile-colors division of Interchemical Corp. as a technical representative. A graduate of R. I. School of Design, his headquarters will be at the district office in Pawtucket, R. I.

HAROLD FRANCIS has been elected a vice president and appointed general sales manager for the Eastern division of Corn Products Sales Co., New York. Since 1947 he had been assistant division manager in New York.

dye chemists, has retired after more than 25 years of continuous service with the company.

General Dyestuff Corp., New York, has made several personnel changes and appointments because of a division of responsibilities by markets rather than on a product basis. Dr. P. M. Kirk is now assistant sales manager in charge of direct sales. T. R. Moore is assistant sales manager in charge of production line and sales services. Walter R. Brandt is now market manager of textile chemicals.

Hilton-Davis Chemical Co., Cincinnati, Ohio, has made known the purchase of a six-story building in Boston, Mass., by Hilton-Davis Sales Co. as a distribution and service center of dyestuffs for the textile industry in Northeastern United States. Arthur S. Davis heads up the new enterprise as manager. He graduated from Lowell Textile Institute in 1940.

Monsanto Chemical Co., Merrimac Div., Everett, Mass., has appointed Frank E. Donofrio textile-chemical sales engineer.

Stein-Hall & Co., Inc., New York, recently elected Robert Strasser executive vice-president.

Virginia-Carolina Chemical Corp., Richmond, Va., has opened a new Vicara office in New York. Lee B. Whitcomb is in charge of the new facilities.

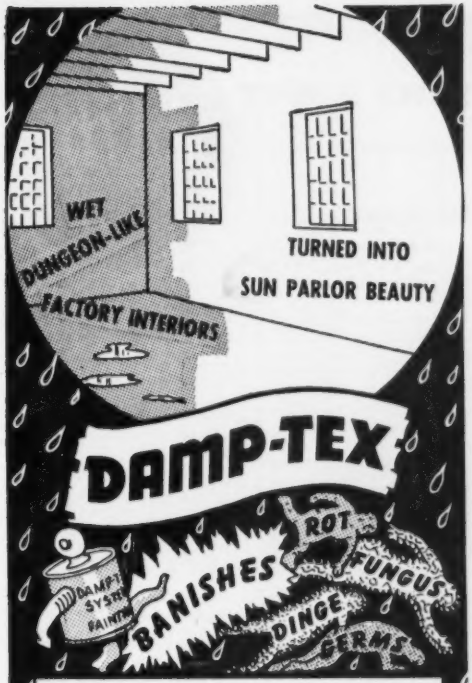
Other Services

American Cotton Mfrs. Institute, Inc., Charlotte, N. C., has added to its local staff Thomas N. Ingram, former senior consultant with Bruce Payne & Associates, Atlanta, Ga.

American Society of Mechanical Engineers is planning a reorganization of its textile division. Heretofore the division has been made up almost entirely of New England members. A group of 20 textile engineers is to be appointed from the South, part from ASME membership and part from non-members in the textile industry. A similar group has been appointed from the Northeast.

New Bedford Textile Institute Club, New York, recently elected Roger Gentilhomme, Cluett Peabody & Co., Inc., its president for 1952. He succeeds George H. Hotte, technical director, A. M. Tenney Associates, Inc.

North Carolina State College, School of Textiles, Raleigh, N. C., has been granted an annual graduate fellowship by Celanese Corp. of America, New York, worth $1,800 plus tuition, fees, equipment, and supplies. The fellowship, in the field of textile chemistry or textile physics, will lead to the degree of MSc. in Textiles for students who elect to follow the curriculum.



Now beautiful porcelain-like lasting beauty and protection against corrosion from moisture, steam, 2% caustic, corrosive acids, gases, etc. Proved for years in more than 9600 industrial plants—Damp-Tex—the wet surface enamel, offers unmatched dependability and satisfactory service. It adheres to any paintable interior wet or dry surface. Will not crack, chip, or peel. Based on extra high coverage, greater hiding power and prolonged durability—Damp-Tex proves 25% less expensive in actual usage.

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BIG NEWS

STAINLESS STEEL COATING

Now, for equipment and metal surfaces subjected to extreme alkali and acid conditions. Brush or Spray. Cost less than 4¢ per square foot. Write for information.

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THE LARGEST MAKERS OF SILK, RAYON AND NYLON WINDING, DOUBLING AND CREPEING MACHINES IN GREAT BRITAIN.

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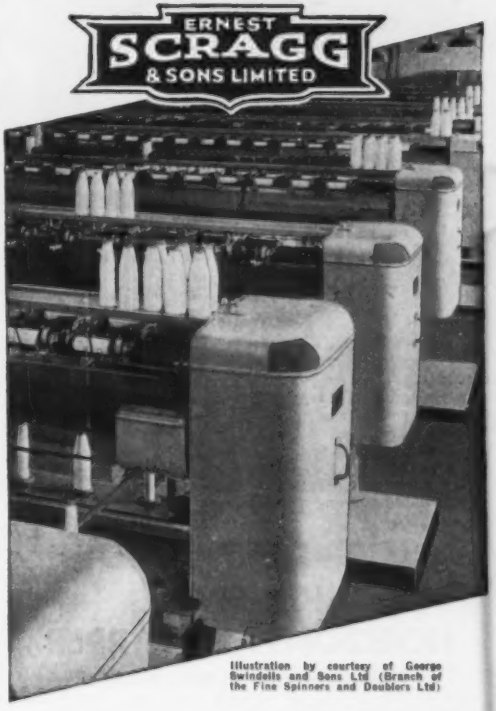

Illustration by courtesy of George Swindells and Sons Ltd (Branch of the Fine Spinners and Doublers Ltd)

For over 60 years Ernest Scragg and Sons Limited have led the way in new developments for the textile engineering industry. Famous mills all over the world rely on Scragg Machines because they have proved them unequalled for quality, simplicity, ease of operation, speed and silence. Scragg's latest types "S.A." and "S.M." Uptwisters are the last word in this class of equipment, bringing rate of production and trouble-free service to the very highest degree. Write for fuller details of Scraggs Machines to the address below.

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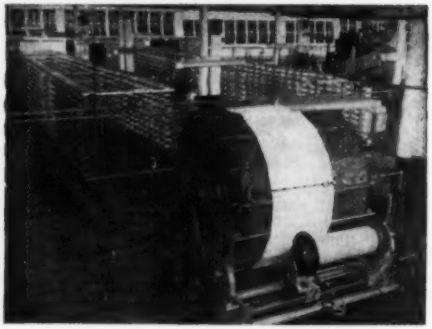
For High-Speed Warping

from cones, spools, tubes and pirns



SIPP-EASTWOOD OVER-END MAGAZINE CREELS

—for raw silk, cotton, acetates, viscose, nylon and other synthetic filament and spun yarns, is made with two types of tensions:

1. Washer type. Employs double set of washers. Gives perfect tension for fiber yarns, as well as to fine denier flat yarns.

2. Pulley type. Retarding action obtained by friction applied to rotating members—not to the yarn.

SIPP-EASTWOOD HIGH-SPEED HORIZONTAL WARPER

Now available in two models

Makes warps of silk, cotton, rayon, acetate, and other synthetic yarns at speeds up to 500 yards a minute. All metal heavy construction. Direct chain drive type—takes up to 28" beams. Clutch type with reinforced beaming end takes 30" diameter beams. Back lash eliminated. Heavy-duty, multi-speed motor. Static eliminator.

ITS A TRADE MARK SIPP EASTWOOD

Send for folders giving all particulars of these and other Sipp-Eastwood machines for efficient warping of synthetic yarns.

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NEWS ABOUT Mills

Cotton Mills

American & Efird Mills, Inc., will be formed if a proposed merger of American Yarn & Processing Co., Mt. Holly, N. C., and Efird Mfg. Co., Albemarle, N. C., is approved by stockholders. In the proposed merger, American Yarn & Processing will exchange preferred and common shares for Efird stock. American Yarn already owns 65% voting control of Efird plants. Arthur K. Winget, president of Efird, would become chairman of the board, and R. S. Dickson, president of American Yarn, would be president. Other officers of both concerns would be named to similar posts.

Anniston Mfg. Co., Anniston, Ala., is building a $40,000 warehouse for storage of finished cotton goods. The structure will contain 9,000 sq. ft. of floor space.

Avondale Mills, Sylacauga, Ala., has asked bids for installation of an air-conditioning system in the office building at its mill and will award the contract this month. James A. Evans, Birmingham, Ala., is the engineer.

Boger & Crawford has begun a $5,000 alteration of its plant at K and Venango Sts., Philadelphia, Pa. William F. Letz, Inc., Adams and Orthodox Sts., Philadelphia, is the contractor.

Borden Mills, Inc., Kingsport, Tenn., plans alterations to its main mill building and the addition of air-conditioning equipment rooms. J. E. Sirrine Co., Greenville, S. C., prepared the plans.

Brookside Mills, Knoxville, Tenn., plans extensions and improvements in its mill to increase present capacity. Cost is reported over $2,500,000, with equipment.

Cosmos Imperial Mills, Imperial Div., Hamilton, Ont., has installed a new humidifying and cooling system in its spinning room that lowers temperatures 20 degrees. Windows in the spinning department have been replaced with permanent glass blocks sealed in place.

Dan River Mills, Danville, Va., notes in its annual report that in 1951 it spent $6,950,000 to modernize its plant and equipment and to expand its finishing facilities. The company says it plans to spend $6,500,000 in capital funds for plant modernization in 1952.

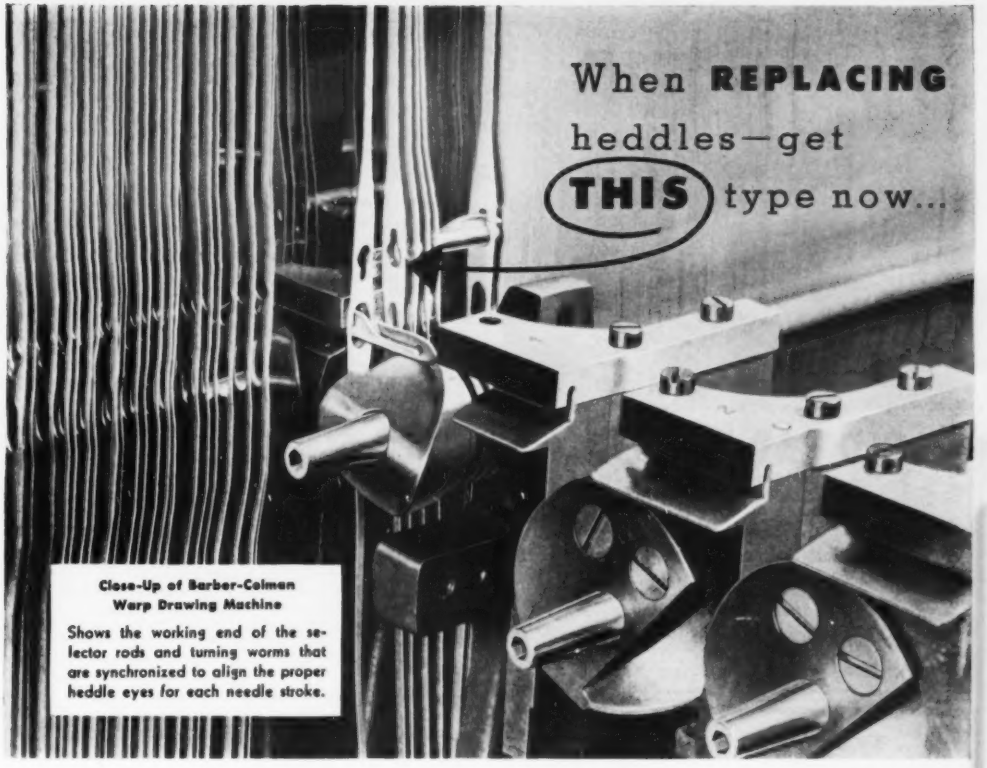
Erwin Mills, Inc., Durham, N. C., has obtained a building permit to enlarge the supply room in the weaving-room annex of Plant No. 1.

Exposition Cotton Mills, Atlanta, Ga., recently installed 4 Ericz plate-type ATO magnets as part of a modernization program.

Gold-Tex Fabric Corp., Mill Division, Rock Hill, S. C., has installed air conditioning and humidification equipment throughout its main mill. The company has had other changes and improvements under way. In the final phase of the program, new equipment for finishing, including compressive shrinkage, will be installed, modern high-speed slashers and automatic starch-handling equipment will be added, and about 70 looms will be replaced.

Goodyear Tire & Rubber Co. has awarded a contract to Wigton-Abbott Corp., Plainfield, N. J., for design and construction of a 299x280-ft. building at Goodyear Clearwater Mills, Cartersville, Ga. The modern windowless building will be air conditioned and will have jumbo-brick exterior and glazed-tile interior.

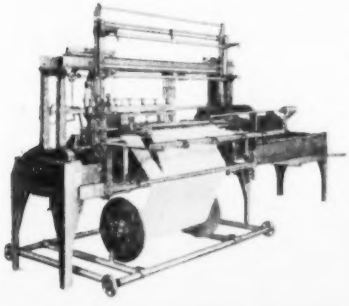
Pakistan—Reports from the Embassy indicate that five cotton mills now under construction in Pakistan will have a total of 65,000 spindles and 900 looms. The government is said to be negotiating for equipment for three additional mills of 25,000 spindles and 500 looms each.



Close-Up of Barber-Colman Warp Drawing Machine

Shows the working end of the selector rods and turning worms that are synchronized to align the proper heddle eyes for each needle stroke.

By replacing your heddles with key-hole type **NOW** you will be ready for a Warp Drawing Machine **LATER**



The Barber-Colman Warp Drawing Machine requires equipping your looms with harness having steel heddles of the type shown above. Sometimes the cost of such heddles may amount to more than the cost of the machine. These facts should not discourage consideration of the machine, in view of the advantages of substantial cost savings in warp preparation. Since you are replacing groups of your heddles frequently and constantly as they wear out — why not replace your worn-out harness with the type that can be used on a Barber-Colman Warp Drawing Machine? Then, when you are ready for the machine, the problem of special heddles will have been solved. For details in connection with such a program, we suggest you consult your Barber-Colman representative.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

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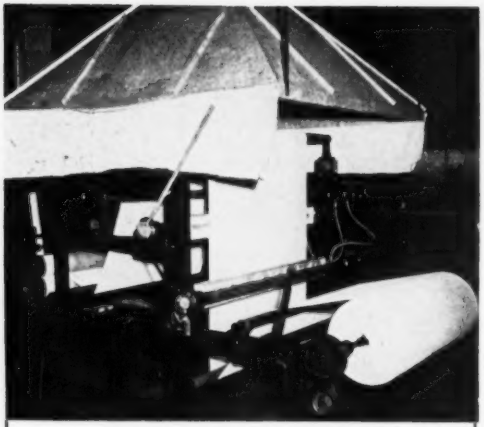

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HUYCK

COMPRESSIVE SHRINKAGE

BLANKETS

for use in shrinking fabrics to the *"Sanforized"* standard by the compressive shrinking process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

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KENWOOD TEXTILE PRODUCTS

F. C. HUYCK & SONS

Kenwood Mills • Rensselaer, N.Y.

News About MILLS

(Continued)

Reeves Bros. has completed a new centralized office building at Fairforest, S. C., that will be used as office facilities for centralized accounting for the company's nine textile plants in the South.

Stauffer-Dobbie Ltd., Galt, Ont., is building a $35,000 addition to its mill. General contractor is Schultz Construction Ltd., Brantford, Ont.

Wilkes-Barre Lace Mfg. Co., Wilkes-Barre, Pa., has been purchased by J. A. Baker and associates of Charlotte, N. C. The property includes a three-story mill building, auxiliary structures, and 33 acres of land. Floor area totals 80,000 sq. ft. The mill is equipped with 12,000 spindles.

Woodside Mills, Greenville, S. C., is nearing completion of an extensive modernization program in five mills. Biggest project is at the Simpsonville plant where a 128x64 ft. weave room and a two-story, 128x50 ft. preparation room are almost finished. Ninety-six additional looms bring to 528 the total number of looms in operation for rayon-cloth production. Fifty-four cards also were installed recently. Construction of a small addition at the Fountain Inn plant has allowed room for 94 additional looms, for a total of 556 looms. Additions were recently completed at the Liberty plant and at Haynesworth.

Woolen and Worsted Mills

Abbot Worsted Co., Graniteville, Mass., plans a new one-story worsted-cloth mill at Bridgeton, Me., reported to cost over $400,000, with equipment. Stewart Associates, Inc., Boston, Mass., is consulting engineer.

Albany Felt Co. of Canada Ltd., Cowansville, Que., has awarded contract for construction of a one-story branch factory at Westmount St., Cowansville. Cost is estimated at $500,000. General contractor is Desourdy Construction Ltd., Cowansville. The building will be one-story, of steel, brick, and concrete-block construction. It will be heated by low-pressure steam. The staff of the parent company, Albany Felt Co., Albany, N. Y., prepared plans.

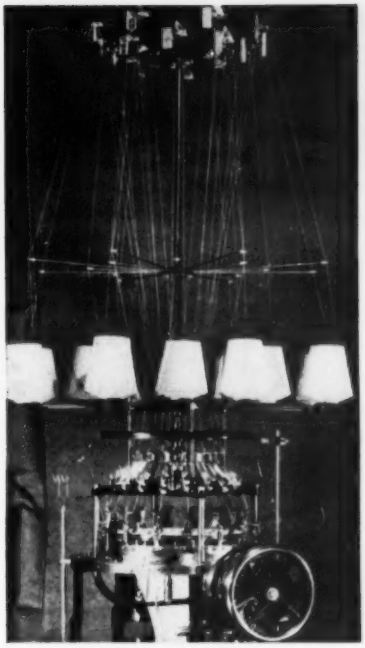
Appleton Woolen Mills, Appleton, Wis., plans a new addition to its mill and will soon ask bids. Orbison & Orbison, Appleton, is the engineer.

Botany Mills, Passaic, N. J., has assigned Robert L. Wentz, a company vice president, to make a tour of Southeastern states to investigate possible mill sites.

Cherry Brook Worsted Mills, Inc., Woonsocket, R. I., has been purchased by the owners of Murray Worsted Spinning Co., Inc., Woonsocket. The new company, which will be known as Lyn Spinning Co., expects to hire 200 employees. Officers of Lyn Spinning Co. are Lyndon F. Murray, president; J. Warner Murray, treasurer; and Harry Bentley, superintendent.

Forestdale Mill, Forestdale, R. I., a unit of William Hollins & Co., Inc., has been taken over by Stamina Mills, Inc. Operations at the mill will continue uninterrupted. Company is now running two shifts on wool interlinings and will continue to produce interlining fabrics of wool and

NEW UTICA & MOHAWK COTTON MILLS, division of J. P. Stevens & Co., Inc., in Mohawk, S. C., has started production. The plant, designed for the complete manufacture of sheets from raw cotton to finished packaged sheets ready for retail sale, encloses 14 acres of floor space. The totally enclosed, air-conditioned mill will have about 45,000 spindles and 900 wide sheeting looms. About 1,200 persons will be employed. The structure was built by Daniel Construction Co., Greenville, S. C., and Birmingham, Ala.



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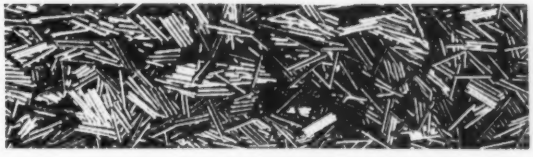

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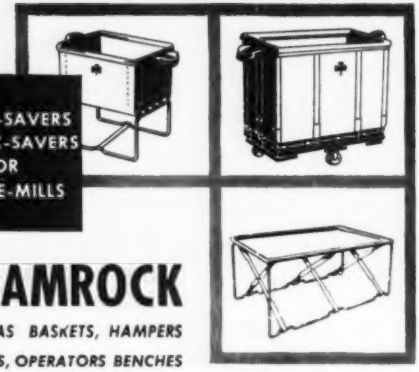

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News About **MILLS** (Continued)

other fibers. Robert English, who has been secretary of the William Hollins mill, will continue as manager under the new ownership. The plant is discontinuing dyeing and finishing of Viyella fabrics.

Geb & Garvan Yarn Co., Seneca Falls, N. Y., has changed its name to Geb & Souhan Yarn Co., Inc., pursuant to action taken at the recent annual stockholders' meeting. Francis J. Souhan is president of the company.

Greenville, Miss.—The City Council has let contract to James F. O'Neil Co., New Orleans, La., at $1,221,500, for installation of plumbing, heating, and other mechanical systems in the new building being erected by the municipality to be occupied under lease by Alexander Smith, Inc., Yonkers, N. Y. The entire project is reported to cost close to $7,000,000, with equipment. William E. Mallett & Associates, Jackson, Miss., is architect.

Marriner & Co., Boston, Mass., has purchased the Whitman top mill on Broadway, Lawrence, Mass., from William Whitman Co., Inc. The five-story building has 420,000 sq. ft. floor space. It is said to have 125 Bradford combs and 70 French combs. It is understood that three scouring trains have been bought for the plant.

Vimy & Cie Ltd., St. Hyacinthe, Que., a subsidiary of A. LaPontre & Cie, Roubaix, France, is progressing with its new plant on Rue Nelson, St. Hyacinthe. Cost of the plant is estimated at $160,000. General contractor is Charles E. Gilbert, St. Hyacinthe. Plans were prepared by the company's engineering staff.

Synthetics Mills

Burlington Mills Corp. has put its new $2,000,000 warehouse at Teterboro, N. J., into full operation. The warehouse serves New York and vicinity and New England.

Greenhalgh Mills, Pawtucket, R. I., has received a permit to build a $15,000 addition.

Oscar Heineman Corp., Chicago, Ill., has bought the former plant of Hoover Hosiery Co., Concord, N. C. The property contains 40,000 sq. ft. Alterations will include installation of air conditioning and refrigeration. New throwing equipment will be installed to produce hosiery and tricot knitting yarns, as well as for general throwing of synthetic and combination yarns. The mill is expected to be in operation by June 1. The Hoover company is now operating in a new plant near Concord.

Rayon Fabrics Corp., Asheboro, N. C., has been merged with William Klopman & Sons, Inc., Greensboro, N. C.

Textron, Inc., Providence, R. I., in its annual report notes that at the end of 1951 its number of spindles has risen to 302,544 (a gain of 5% during the year), its looms to 10,308 (a gain of 14½%), and its tricot knitting machines to 95 (an 82% gain).

Knitting Mills

Beautiful Bryans, Inc., Chattanooga, Tenn., is the new name of the former Bryan Full-Fashioned Mills, Inc.

Burlington Mills is reported to be transferring its entire seamless-hosiery operation to Harriman, Tenn. Machinery is being moved from the Bur-Mil plant at Montreal, Canada, and is being installed at Harriman Hosiery Mills.

Cobble-Muse Hosiery Mills, Chattanooga, Tenn., has a low bid from O. B. Davis Co., Chattanooga, for a one-story addition. James E. Gauntt, Chattanooga, is the architect.

Danita Hosiery Mfg. Co., Newark, Del., has completed expansion of its hosiery-production and finishing divisions and is now expanding into production of lingerie.

Dawson, Ga.—A new hosiery mill operated with machinery and equipment from the closed-down Albany Mfg. Co., Albany, Ga., is being constructed here. A new air-conditioned building will be erected. The new company is headed by James G. Wright, a former official of the Albany plant.

Diana Stores Corp. plans to

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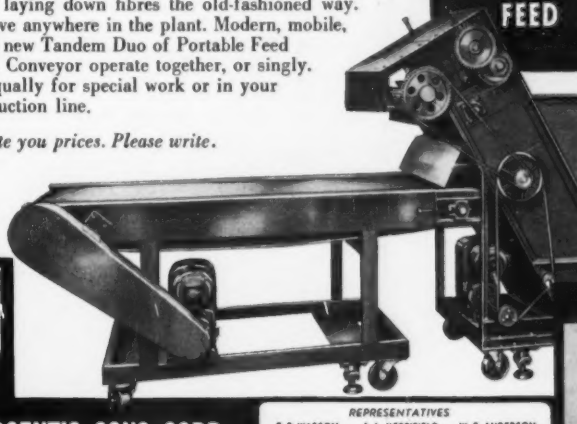

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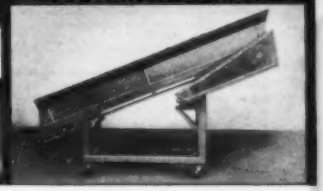

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News About MILLS (Continued)

build a hosiery-manufacturing plant in Bethel, N. C. Four 60-gauge machines will be installed. The new plant is scheduled to begin operation by August. It will have 15,000 sq. ft. and will cost $80,000. The company will be known as Her Majesty Hosiery Corp.

Federal Knitting Co., Inc., Philadelphia, Pa., is installing another Reading 60-gauge knitting machine. The installation is part of the company's $250,000 modernization program. For the past year, Federal has been installing new multi-section 51- and 60-gauge machines and a conditioning unit for 15-den. goods.

Halton Hosiery Mills, High Point, N. C., is installing 25 rebuilt Scott & Williams cushion-sole knitting machines to be used for defense orders.

P. H. Hanes Knitting Co., Winston-Salem, N. C., expects an addition now under construction to be completed this month. The three-story building, containing 75,000 sq. ft., is being erected at the Hanes mill community. New carding, combing, and spinning machinery will be installed.

Imperial Knitting Co., Milwaukee, Wis., has acquired all physical assets of Hercules Knitting Co., Milwaukee. Imperial will take over the operations of Hercules, using its plant for the present and retaining its brand names and sales force. Hercules will operate as a division of Imperial. Bruno Kroetz, president of Hercules, will continue as manager of the new plant.

Julius Kayser & Co., New York, N. Y., will erect its fifth South Carolina plant near Liberty. Cost is estimated to be in excess of $1,000,000. The building will be of one-story windowless design, completely air conditioned and fireproof. New machinery will be installed. Daniel Construction Co., Greenville, is the contractor.

Stephan Kee is building a new hosiery mill at 2520 Orthodox St., Philadelphia, Pa. Charles Slowick, Philadelphia, is contractor for the one-story building, which will cover an area 26x75 ft. The building will be of cinder-block construction.

Liberty Knitting Mills, Philadelphia, Pa., has installed two more TAI interlock and jersey machines made by Jacquard Knitting Machine Co., Philadelphia.

Main Knitting Mills Ltd., Montreal, Quebec, has completed an expansion program that included additions to an original building and installation of new machinery. In its enlarged buildings, the firm now has 30 circular knitting machines, including Brinton, Wildman, and Supreme, and other equipment.

Monarch Knitting Co. Ltd., Dunnville, Ont., expects to get its underwear department, now being moved from the company's plant in Toronto, in operation in Dunnville by July. About 150 employees will be added to the staff of the Dunnville main plant. Existing worsted-yarn and outerwear departments will undergo changes in location and layout of equipment to accommodate the new department.

Southern Fabrics, Inc., a tricot knitting plant at Burlington, N. C., has been purchased by Manny Kaye and Seymour Topping of New York. All stock was sold to Mr. Topping and Mr. Kaye for a price in excess of $450,000. The plant has 10 tricot machines in operation at present and plans to add additional machines. D. N. Southerland, present treasurer, will remain with the new company as vice president and general manager. Other officers include Mr. Kaye, president; M. Shorenstein, of New York, secretary; and Mr. Topping, treasurer.

Standard Hosiery Mills, Inc., Burlington, N. C., has purchased 20 32-section, 51-gauge knitting machines from Rosedale Knitting Mills, Reading, Pa. All machines being purchased are automatic welt turners and are of postwar make. The new machines will go into the new section the company is adding to its plant at Almance in a construction program that will cost about $50,000.

Tennessee Sutherland Mill Co., Elizabethton, Tenn., has been sold to Samuel R. Pennys & Associates, New York, N. Y. The mill has been renamed Tennessee Tricot Mills.

Textron, Inc., East Greenwich, R. I., is expanding its

Do Your Semi-Decating By Sets on Gessner's NEW 60" Versamatic

WOOLENS AND WORSTEDS All of the features of quality decating made famous by the 36" machine, are present in this new Gessner 60" Versamatic — but at DOUBLE the rate of production. You can decate from 6 to 8 pieces of woolen or worsted — evenly and uniformly throughout every piece. Unique hydraulic drives and apron guide mechanisms keep the apron running smoothly and without undue tensions at a speed never before attained.

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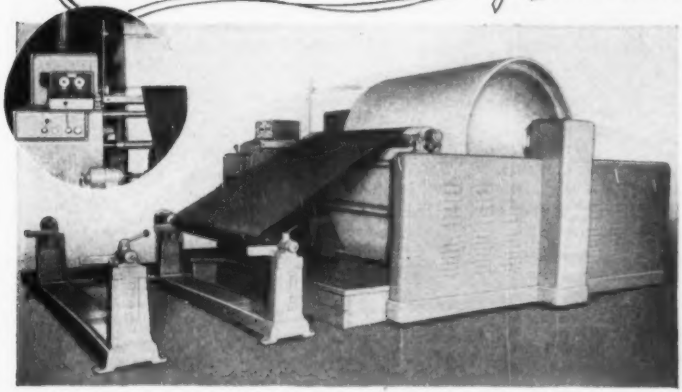

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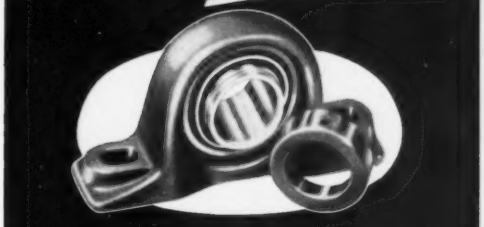

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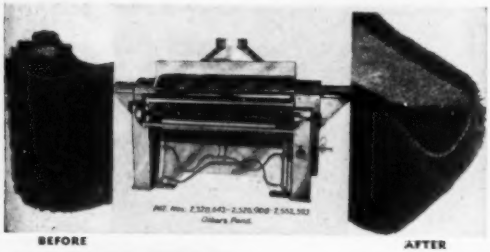

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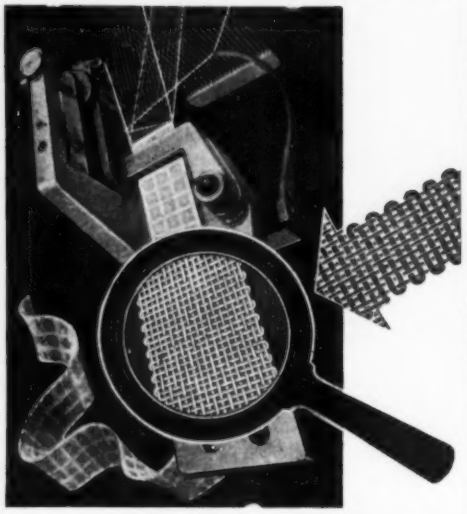

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News About MILLS (Continued)

tricot knitting plant from 42 to 50 machines.

Webco Mills, Inc., Burlington, N. C., has begun limited operations, with full-time production expected by July 1. A new building has been built to accommodate new machinery, including eight tricot high-speed machines and one high-speed warping machine. Webb Durham will devote full time to the operation as manager and treasurer. Reid A. Maynard will be president, and Mrs. Webb Durham, vice president and secretary. Carl Willard, for several years with Burlington Mills' tricot division, has been named superintendent. Mr. Durham was formerly tricot-division manager for Burlington Mills.

Whisnant Hosiery Mills, Inc., has been sold by the owners, Mr. and Mrs. Clarence L. Whisnant, Hickory, N. C., to Mr. and Mrs. Ernest E. Whisnant. The two men are brothers. The transaction included men's hosiery plants at both Hickory and Maiden, and Whisnant Hosiery, Inc., New York, sales agency.

Dyeing and Finishing Plants

Burkyarns, Inc., Valdese, N. C., is erecting an addition to its dye plant that will include pressure package-dyeing in addition to skein-dyeing equipment.

Columbia Mills, Inc., Minetto, N. Y., has received an offer from an investment group, headed by Jay Levine and David Berdon, New York, N. Y., for purchase of capital stock of the company for a reported consideration of $2,178,000.

Dye Masters, Inc., Inglewood, Calif., has expanded operations by adding new equipment and space. The new equipment includes stainless-steel dyeing equipment purchased from Worth Bros., dyers and spinners, who recently ceased business operations after 30 years. The company recently purchased an adjacent lot and plans to raze present buildings and erect its own warehouse.

International Latex Corp., Dover, Del., is building the first unit of a manufacturing plant and also a sewage treatment plant at Cheswold, Del. The building of brick, block, and steel frame will be one-story, containing 240,000 sq. ft. of floor space. Hughes, Foulkrod Co., Philadelphia, is general contractor for both projects.

Julius Kayser & Co. has begun grading for a new hosiery finishing plant to be located on a 25-acre tract at Liberty, S. C. The work will progress as facilities and materials become available. The Liberty plant will do hosiery finishing and dyeing for all other Kayser branches in this area. About 300 persons will be employed on one shift. The building was designed by Kayser engineers. Daniel Construction Co., Greenville, is contractor.

Lanett Bleachery & Dye Works, Lanett, Ala., will begin construction soon on two buildings, estimated to cost $350,000, that will streamline present operations.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., plans to build an 88,000-sq. ft., two-story addition that will relieve congestion in the present plant. Most of the new building will be used for warehouse purposes. The additional space is needed for goods from the new synthetics plant now being built by M. Lowenstein & Sons, in Anderson, S. C., which will be sent to the Rock Hill plant to be printed, dyed, and finished.

Santee Print Works' new plant at Sumter, S. C., has begun operations. The new plant has a production capacity three times that of the former plant.

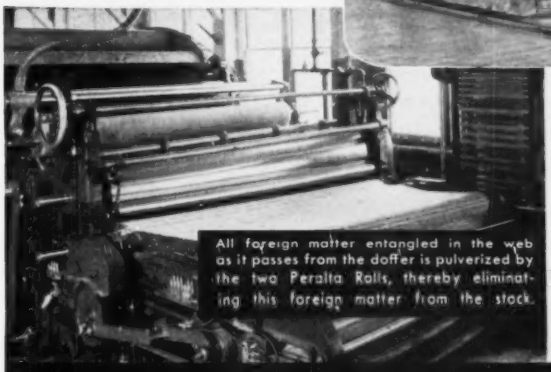
Textron, Inc., New York, N. Y., has purchased R. W. Bates Piece Dye Works, Inc., Garnerville, N. Y. The plant is being expanded to dye and finish synthetic-blend fabrics on a commission basis for the company's converter customers.

Unger Paper Co., 211-215 W. 20th St., New York, N. Y., has been formed by Milton Unger. The company will do laminating of all types of fabrics to parchment, and of foils to fabrics, in roll-to-roll or roll-to-sheet form. The laminating and sheeting equipment is of the latest design that can handle widths to 53 in.

Duesberg-Bosson WOOLEN CARD and PERALTA MACHINE

(PATENTED)

Shown here: 3-cylinder set with Peralta Machine. Also available in 2-cylinder and 4-cylinder sets.



All foreign matter entangled in the web as it passes from the doffer is pulverized by the two Peralta Rolls, thereby eliminating this foreign matter from the stock.

BUILT in two sizes, 78¾" and 72¾", this well-known woolen carding machine offers substantially greater production and noticeably improved quality because of inherent design features and operating advantages.

A new 2-cylinder carpet card now in operation in the Duesberg-Bosson Woolen Spinning Co., Jefferson, Mass., is causing great interest.

CATALOG AVAILABLE ON REQUEST

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Manufacturers of Woolen Machinery, Developed from a Background of Over 115 Years

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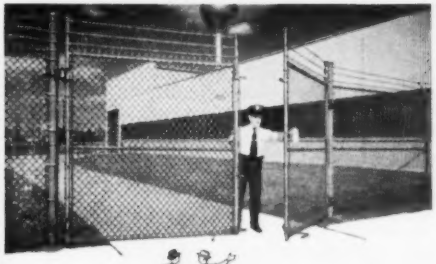

Defense against hazards which could hinder or stop production is a major function of Page Chain Link Fence, guardian of persons and property for more than 60 years. Consult the skilled Page Fence erecting firm near you, whose name we will send with fence data on request. Cost estimates, no obligation. For information:

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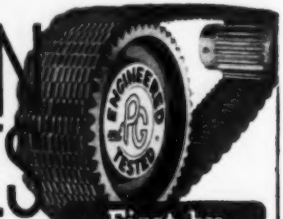

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- Picker • Draw Frame
- Roving frame • Sliver Lap • Cylinder Jack
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Chain Drives Give You

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THE SOUTH'S LARGEST MANUFACTURER OF GEARS AND CHAIN DRIVES

NEWS ABOUT Men

Frank J. Aiken has resigned as general manager of the Verney Corp. mill at Manchester, N. H., where he has been for the past year and a half. He has not announced his future plans.

Robert A. Appleton has been elected president of American Textile Co., Inc., Pawtucket, R. I. For the past 11 years, he has been associated with the company's New York office as sales manager, vice president in charge of sales, and executive vice president.

William Argo has been named manager of Stylewise Mills, Inc., Carrollton, Ga., succeeding **Paul Bubeck**, manager since the mill was opened in 1950.

J. P. Barker has resigned as superintendent of Wyandotte Worsted Co., Waterville, Me.

Nelson Barlow has been appointed plant manager of Apponaug Co., Apponaug, R. I. Mr. Barlow has been manager of the Verney Corp. dyeing plant in West Peterborough, N. H. He succeeds the late **Edwin Farnsworth.**

Dwight D. Billings was elected treasurer of Pacific Mills, Boston, Mass., at the company's annual meeting of stockholders. **Henry M. Bliss,** who has been both president and treasurer, will now devote his entire attention to the presidency. **Theodore R. Peary,** who has been with the company since 1942, was elected secretary and clerk to succeed Mr. Billings. He will also continue as controller. **Roger C. Damon** and **Marion C. Francis** were elected to the board of directors.

Lyman Billings, until recently associated with the chemical department of Arlington Mills, Lawrence, Mass., has accepted a sales position with Sandoz Chemical Works in the New England area.

Carroll L. Blomgren has resigned from Franklin Process Co., New York, N. Y. Mr. Blomgren had been with the firm for over 16 years. He has not announced his future plans.

A. B. MOSS, resident manager of the Waynesboro, Va., plant of Wortendyke Mfg. Co., has been elected a vice president of the company. Other officers were re-elected.

George Bott has been appointed superintendent of the Kennebec Mills of American Woolen Co., Fairfield, Me.

Richard T. Chatham, Jr., was elected a member of the board of directors of Chatham Mfg. Co., Elkin, N. C.

R. D. Comparet, former sales manager of the Chicago office of Cluett, Peabody & Co., Inc., was recently named president of Cluett, Peabody & Co. of Canada Ltd. He succeeds **G. E. Amerman,** former president of the Canadian company, who has been transferred to New York to head the entire sales division of Cluett Peabody.

Henry A. Coxe has been promoted from weave-room overseer to plant superintendent of United Rayon Mills, Elberton, Ga.

F. S. Culpepper, formerly with Saco-Lowell Shops, is in charge of a new department of Stonecutter Mills Corp., Spindale, N. C., which will manufacture spun yarns. **J. D. Burnette** is his assistant.

Charles E. Daniel, president and treasurer of Daniel Construction Co., Greenville, S. C., and **Henry C. Taylor,** presi-

This is the amazing "before-and-after" story

Textile World, November, 1951

New Agents Clean Machine Parts by Cold Dipping

BEFORE AFTER

A remarkable cleaning job is claimed for Kleenapart and Kleenakarb, new cleaning agents developed by The Selig Co., 336-350 Marietta St., N.W., Atlanta 1, Ga. The agents will clean valves, gears, sprockets, frames, chains, screens, and all machine parts. The removal of oil, grease, dirt, grime, carbon, and other foreign matter is accomplished by a simple "cold dipping" process that requires no attention, it is claimed. Parts to be cleaned are simply immersed in Kleenapart or Kleenakarb for the required length of time, then removed, rinsed, and are ready for use or storage. Both products are listed by the Underwriters' Laboratories and are safe to use when directions are followed.

that's told over and over again!

Selig's Kleenapart and Kleenakarb were originated to meet the exacting requirements of the aircraft industry. Peacetime industries, one after another, quickly grasped these amazing benefits: Complete removal of oil, grease, dirt, carbon and other foreign matter from metal parts by a simple "cold dip" process. Long life and low cost are included with the many advantages of using . . .

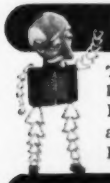
Kleenapart-Kleenakarb
Clean Machine Parts by Cold Dipping

Manufactured only by
The Selig Co.
Manufacturing Chemists
Since 1896

SELIG

ATLANTA
DALLAS NEW ORLEANS HOUSTON

for Better Belt Joints



To keep belts in service longer, use only GENUINE Clipper Belt Hooks applied with Clipper Belt Lacers.

use Clipper Belt Hooks

Clipper Hooks are made of the finest quality wire—BETTER than ever before—produced for our exclusive use. Hooks hold with firm, sure grip—give longer satisfactory service.

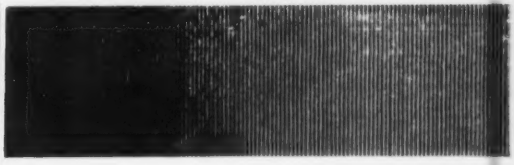
and Clipper Belt Lacers!

The Clipper No. 9 Portable Lacer laces belts up to 6 inches wide in one quick, easy operation. Under powerful pressure hook legs are embedded flush with the surface of the belt and points clinched, making a perfect joint. Phone your mill supply jobber for a demonstration!

No. 9 Portable Lacer

CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN, U.S.A.

Clipper BELT LACING EQUIPMENT



How to renew old reeds

LEFT side of the reed above is shown as it came out of service—right side after 45 minutes of Oakite conditioning. Soil and rust are completely removed without brushing—then a dip in Oakite Special Protective Oil removes moisture, prevents rerusting.

Renew *your* reeds the mill-proved Oakite way. Ask your Oakite Technical Representative, or write Oakite Products, Inc., 26C Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U.S. & Canada

Preferred by diemakers everywhere, but widely used for linkage, trunnion mountings, shafts and numerous other applications throughout industry. Shoulders are held to close tolerances, threads and head are concentric with the body, screws are threaded close to the shoulder. Write for descriptive literature. STANDARD PRESSED STEEL CO., Jenkintown 35, Pennsylvania.

SPS recommends *Standards*—¼" to ¾" available from your local UNBRAKO distributor's stock.

UNBRAKO SOCKET SCREW DIVISION **SPS** JENKINTOWN PENNSYLVANIA

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LINT COTTON OPENER

Designed and Developed

by the

Southern Regional Research

Laboratory, New Orleans, La.

Now being manufactured

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SALISBURY IRON WORKS, INC.

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MAY WE HAVE YOUR INQUIRIES.

News About **MEN**

(Continued)

dent of Taylor, Pinkham & Co., Inc., former sales agents for Utica & Mohawk Cotton Mills, Inc., have been elected to the board of J. P. Stevens & Co., New York.

R. E. Daze has resigned as manager of Lehigh River Mill, Inc., Northampton, Pa.

William Eastman, director of industrial relations for Bachman Uxbridge Worsted Corp., Uxbridge, Mass., has resigned to become industrial relations manager of John Hancock Life Insurance Co.

Paul Foster has been appointed overseer of planning at Mills Mill, Woodruff, S. C., a division of Reeves Bros.

C. A. Fox, superintendent of the Troutman Plant of American Thread Co., Troutman, N. C., has retired. At one time he was associated with Rhodes Mfg. Co. and Saxony Mills, Lincolnton, N. C., and Spencer Mills, Spindale, N. C.

L. F. Gatlin, Jr., former general superintendent of Riverside Div. of Dan River Mills, Danville, Va., is now manager of Erwin Mills, Neuse Plant, Neuse, N. C.

Clovis Gignan is now employed as consultant for Woonsocket Spinning Co., Woonsocket, R. I. He was previously night superintendent of Webster Mills, American Woolen Co., Webster, Mass.

J. J. Glassman has been appointed merchandising manager of converted fabrics for Dominion Textile Co. Ltd., Montreal, Que.

G. Harry Gwinell was elected president of Berkshire Woolen Co., Pittsfield, Mass. **Denis T. Noonan, Sr.**, former president and treasurer, has been named chairman of the board. **Denis T. Noonan, Jr.**, has been reelected vice president and has been made treasurer.

Luther H. Hodges, former vice president of Marshall Field & Co. and general manager of the manufacturing division, is a candidate for lieutenant governor of North Carolina.

Richard Heidenreich has been appointed assistant to the manager of Dorr Woolen Mills, Newport, N. H. Until recently Mr. Heidenreich was with Ayer Mills of American Woolen Co., Lawrence, Mass.

ROBERT R. WEST, president of Esmond Mills, Inc., New York, until it was sold to Textron, Inc., in 1948, was recently named president of Sulloway Hosiery Mills, Franklin, N. H., succeeding Richard W. Sulloway. For the past four years Mr. West had been connected with the Departments of Defense and State in Washington, D. C.

S. G. Hunter has resigned as superintendent of Dodgeville Finishing Co., Dodgeville, Mass.

Eaton B. Lloyd, vice president in charge of merchandising and sales for Dan River Mills, Inc., Danville, Va., has resigned. His plans have not been announced.

John J. Lowe has been elected assistant vice president of Century Ribbon Mills, Inc., New York, N. Y. Mr. Lowe has been with the company six years in charge of mill operations.

Albert W. Lutz has been engaged by American Woolen Co., Lawrence, Mass., to head its new Systems and Procedures Department.

Dr. William H. Lycan and **Richard V. Mulligan** have been elected vice presidents of Johnson & Johnson, New Brunswick, N. J.

Fred M. Lyon, treasurer of Opp Cotton Mills and Micolas Cotton Mills, Opp, Ala., was named president of both corporations recently. **Mrs. C. W. Mizell**, who has been president since she succeeded her late husband in 1941, became chairman of the board.

PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John:
Douglas Crown Thin Boiling Starch is made in all fluidity ranges to suit each individual mill's requirements. Let's arrange for a trial order of the type recommended for our purposes
Jim

BUY U.S. SECURITY BONDS NOW!

End your humidity control problem!

with this...

BARBER COLMAN

ELECTRONIC "PACKAGE" UNIT

SUPER-SENSITIVE

INSTANT RESPONSE

RUGGED PLUG-IN ELEMENT

EASILY INSTALLED

ADJUSTABLE DIFFERENTIAL

POSITIVE STABILITY

SIMPLE ADJUSTMENTS

This All-In-One Humidity Control unit is your answer to accurate, sensitive performance, whether in weave sheds, spinning rooms, roving rooms, or any location where machine loads might cause spotty conditions. This dependable self-contained control is performance-proved under actual job conditions. *It will not shift in control point after weekend shutdowns.*

Barber-Colman Electronic Humidity Controls are efficiently designed for textile mill spaces which are partially air-conditioned. They can be applied to any humidification system utilizing either spray heads or centrifugal type atomizers.

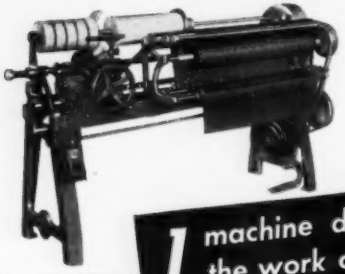
These flexible controls are also available with remote room or duct sensing elements in either the two-position or proportioning types for completely air-conditioned mills.

WRITE for NEW illustrated bulletin F-5173 "Electronic Humidity Controls for Process or Air-Conditioning — Humidifying or Dehumidifying" sent promptly on request.

BARBER-COLMAN COMPANY

1208 ROCK ST., ROCKFORD, ILLINOIS

UTICA Combination Winding and Cutting Machine



1 machine does the work of 2

THIS fast-producer has all the advantages of two machines, but uses the floor space of just one. Cuts light, medium, or heavy weight, both straight and bias fabrics. Cutter and Winder can be run at the same time. Rigidly constructed for long, trouble-free operation. Has measuring scale for cutting accurate rolls. It's safe — knife, grinding wheel, all gears and sprockets are well-guarded. Equipped with Veeder Root yardage counter. Made in 40, 45, and 55 inch width machines. Make your own bindings — as you need them — from the same material as your product — at lower cost. Write today.

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Builders of Textile Machines Since 1903

Stainless Steel

BEAKERS & DYE POTS

FOR ALL TEXTILE & LABORATORY USE . . .

Leading companies throughout the industry are our satisfied customers

AMERICAN METAL SPINNING & STAMPING CO.

130 East 13 St.
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INDUSTRIAL *Engineers*

SPECIALIZING IN TEXTILES FOR OVER ONE-THIRD OF A CENTURY

PAYROLL CONTROLS COST SYSTEMS

SPECIAL REPORTS WORK LOAD STUDIES

COST REDUCTION REPORTS

RALPH E. LOPER CO.

GREENVILLE, S. C. FALL RIVER, MASS.

News About MEN

(Continued)

Eugene MacDonald, the treasurer of Savage Arms for many years, has joined the board of directors of Utica Knitting Co., Utica, N. Y. He retired from active business a few years ago.

W. N. McAlister has been appointed general overseer of weaving in No. 1 plant of Republic Cotton Mills, Great Falls, S. C., a division of J. P. Stevens & Co., Inc. Prior to his promotion, Mr. McAlister was instructor in the sample room of No. 3 mill of the same company at Great Falls. He has been with these mills for three years.

John Matthews has been appointed manager of the engineering department of M. T. Stevens & Sons Co., division of J. P. Stevens & Co., Inc., Lawrence, Mass., succeeding **Leslie A. Runton**, who resigned to go with Alexander Smith, Inc., as director of engineering. Mr. Matthews has been assistant to Mr. Runton for the past year and a half.

Walter C. Merigold has been named president of Ripon Knitting Works, Ripon, Wis., succeeding **Alfred S. Reed**, who has been named chairman of the board. **H. A. Cody, Jr.**, treasurer, has also been named sales manager, succeeding **Stanley M. Herlin**, who has retired as vice president and sales manager. **A. J. Novitske**, formerly vice president in charge of purchasing, has been named production manager.

Kenneth W. Merrill has been elected vice president of Abbot Worsted Co., Graniteville, Mass. Mr. Merrill will keep his offices in the Empire State Building, New York, N. Y., where he has been manager since 1949.

Joseph E. Merton has rejoined Textron, Inc., New York, N. Y., as quality-control director for the gray goods division. Mr. Merton was recently with Deering, Milliken & Co., as quality-control director.

John L. Morgan, Jr., has been promoted from superintendent of Stanley Mills Div., Stanley, N. C., and general superintendent of Rayon Spinning Div., Gastonia, N. C., both units of J. P. Stevens & Co., Inc., to assistant general manager of both. **Ralph P. Sullivan**, superintendent of the worsted department, has been named to succeed Mr. Morgan.

LESLIE L. COBB has joined the Textron group as technical assistant to R. L. Rogers, vice president of Textron Southern. Mr. Cobb, who was formerly technical representative of Tennessee Eastman Corp., will make his headquarters in Textron's Anderson, S. C., office.

Earl Parker, standards engineer with Imperial Div., Imperial Cotton Mills Ltd., Hamilton, Ont., recently resigned his position to make his home in California.

George E. Parkin has been named resident manager of Sheble & Wood Yarn Co., Salamanca, N. Y., succeeding **Harold Brooke**. Mr. Parkin was formerly with Arms Textile Mfg. Co., Manchester, N. H.

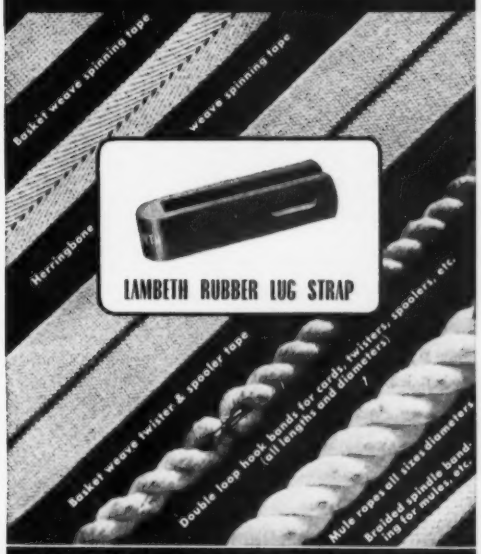
James C. Platt, vice president and director of Chicopee Mfg. Corp. and manager of the Gainesville, Ga., plant for 16 years, has retired.

Laurence C. Plowman, industrial-development consultant of Portland, Me., has been appointed vice president in charge of the industrial-building department of Textron, Inc., Providence, R. I.

Frederic A. Prisley has been appointed plant chemist for Brookfield Mills of Pacific Worsted Division at Brookfield, Va. He was formerly with Watson-Park Chemical Co., Ballardville, Mass.

Robert Patterson has been appointed general manager of Holly Knit, Inc., Mt. Holly, N. C.

LAMBETH PRODUCTS
FOR SPINNING, TWISTING, SPOOLING, WEAVING


Basket weave spinning tape
weave spinning tape
Herringbone
LAMBETH RUBBER LUG STRAP
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

LAMBETH ROPE CORPORATION
Plants at New Bedford, Mass. and Kings Mountain, N. C.

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TEXTILE MILL CRAYONS

EMPIRE TEXTILE MILL CRAYON
Don't compromise on Quality --- Get the BEST
By every standard of comparison EMPIRE Textile Mill Crayons are the BEST . . . The result of careful research and study they are the result of more than a century of experience by Crayon engineers . . . When marking COUNTS you can always COUNT on EMPIRE Textile Mill Crayons.
The American Crayon Company
Sandusky, Ohio
New York

DANA WARP MILLS
Westbrook, Maine

Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps

Spinners of Fine Woolen, Merino & Specialty Yarns

The ALDON SPINNING MILLS Corp.
TALCOTTVILLE, CONN.
Represented by
Richard C. O'Brien
Boston • New York • Philadelphia • Chicago

ROME SOAP MFG. CO.

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

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CONTINUOUS DYED SULFUR BLACK WARPS.

For a deep black that is exceptionally fast to **washing** and free from tendering, consult Caledonian.

Warps are bound, dyed, washed, chromed, and **softened** all in one continous operation thru the latest type **multiple** box dyeing machine, thus assuring the ultimate **beamer** or quiller a soft, free running warp.

CALEDONIAN DYE WORKS
Emerald & Westmoreland Sts.
Phila. 34, Pa. RE 9-2322

YOU CAN ELIMINATE ALL STATIC

WITH THE HERBERT

Oxy Neutralizer "Cold" Bar

NO ARC!

NO SHOCK!

NO SPARK!

Now you can remove instantly, simply and safely static charges on all textile fibres, slivers, roving, yarns and fabric. This means the elimination of a costly production handicap. A HERBERT OXY COLD BAR attached to the machine on which you are experiencing static interference . . . and presto your troubles are over. You will get unbroken card slivers . . . no flying ends . . . no sticking. Your machines will handle material of any fibre smoother, easier and faster. Beat high production costs by curing "static expense".

Send us details of your static problem. We will submit recommendations without obligation. Brochure on request.

HERBERT PRODUCTS Inc. 74-37 JAMAICA AVE. WOODHAVEN 21, N. Y.

"YOU CAN COUNT ON WAK COUNTERS"

They are
RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

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ENGINEERS-ARCHITECTS

for the Textile Industry

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BOSTON 9, MASS. 40 Central Street

SPARTANBURG, S. C. Montgomery Bldg.

News About **MEN** (Continued)

M. Hurt Ramsey has been promoted to assistant superintendent of Industrial Cotton Mill, Rock Hill, S. C., a division of J. P. Stevens & Co., Inc.

Lionel A. Roberts has resigned from Valley Lace Co., West Warwick, R. I. Mr. Roberts was superintendent of dyeing and finishing for 18 years and vice president for 9 years.

Richard Seifert has become resident manager of Vassalboro Mills, American Woolen Co., North Vassalboro, Me., succeeding **H. J. Smith, Jr.**, who has been transferred to Webtser Mills, Webster, Mass., as resident manager.

J. M. Shockley has become superintendent of a new yarn mill being started by Woonsocket Worsted Co., Laurens, S. C.

Hardwick Stires has been named a director of Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn., to succeed **Roger Amory**, who is retiring.

John Strater has resigned as superintendent of McCallum and Robinson, Inc., Memphis, Tenn., to join Herron Yarn Mills, Memphis, as superintendent.

Lyman Thompson, who has been assistant to the head of Catalina, Inc., Los Angeles, Calif., has resigned.

William Parks Van Nostrand has been appointed office manager and assistant to the executive vice president of Martin Fabrics Corp., New York, N. Y.

Robert Wagner, a specialist in the calendering field, has been retained in a consulting capacity by Joseph H. Bancroft Co., Wilmington, Del.

Frederick S. Waite has been promoted to sales manager of William Allen Sons Co., Worcester, Mass. Mr. Waite has been plan superintendent.

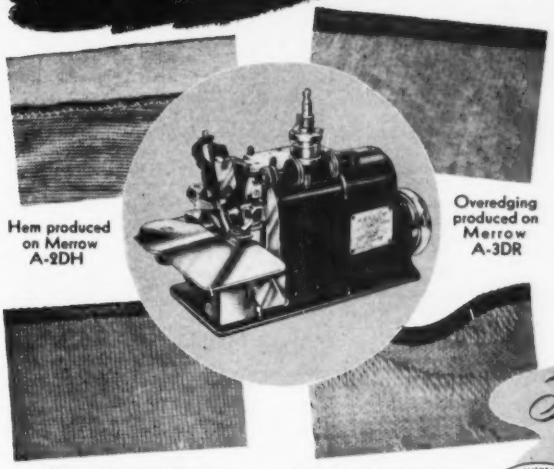
Charles Wemouth has been promoted to overseer of spinning at Merrimack Mfg. Co., Lowell, Mass., succeeding **Russell Roberts**, who is now with Dan River Mills, Danville, Va.

Robert F. Whalen has been elected a director and secretary of Ackshand Knitting Co., Ballston Spa, N. Y.

Edwin Wilkinson, associated for the last 19 years with the National Association of Wool Manufacturers at its New York office, has been appointed executive vice president of that association and will be in charge of its activities. A president will be elected from industry at the annual meeting May 8 to serve without pay. The new organizational setup follows the death of **Arthur Beese**, whose assistant Mr. Wilkinson has been since 1942. Mr. Besse was the association's president for many years.

W. J. FULLERTON (left) has rejoined Dan River Mills, Inc., Danville, Va., as merchandise manager of the Dress Goods Department. Before joining Canadian Cottons Ltd., Montreal, last summer, Mr. Fullerton had been with Dan River for 23 years. W. C. HARRIS (right) has been named merchandise manager of the company's shirtings, chambrays, plain-colored fabrics, and stormwear and outerwear departments. He was formerly vice president in charge of merchandising and sales and a director of Mooresville Mills. Ira Silver, who joined Dan River early this year, continues as merchandise manager of the men's and women's suiting department.

"MERROWING" . . . Overseaming, Overedging and Hemming



Hem produced on Merrow A-2DH

Overedging produced on Merrow A-3DR

Overseaming produced on Merrow A-3DW

Smooth scallops produced on Merrow A-3U

Merrow Overstitching Machines reflect over 60 years' experience in the manufacture of industrial sewing machines. The term "Merrowing" . . . used throughout the industry to describe overstitching . . . is recognition of this experience and "know-how"

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For use on rayon, cotton and woolen material.

Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.

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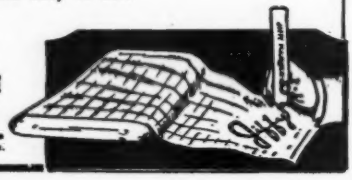

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OBITUARY

Frank G. Ahern, 57, president of Ahern Textile Print Co., Norwich, Conn., and Griswold Textile Co., Westerly, R. I.

John Banner, 82, one of the founders of Renfro Hosiery Mills Co., Mt. Airy, N. C.

John Bartelt, 69, vice president of Leigh Textile Co., Boston, Mass.

W. Henry Belk, 89, chairman of the board of Belvedere Hosiery Co., Charlotte, N. C.

Stewart M. Burns, 54, president of B-K Hosiery Mill, Inc., Franklin, N. H.

Edwin F. Burr, sales manager of Nelson Knitting Co., Rockford, Ill.

Amory Coolidge, 57, executive vice president and a director of Pepperell Mfg. Co., Boston, Mass. He was also a director of Scott & Williams, Inc., Laconia, N. H.

Walter J. Crocker, 46, head of the dyeing department of Empire Worsted Mills, Inc., Jamestown, N. Y.

Thomas Francis Cuddy, 79, former superintendent of American Yarn & Processing Co., Mt. Holly, N. C.

George A. Davis, 83, retired overseer. He was last employed at Kent County Mill, West Warwick, R. I.

John Day, 73, assistant manager of the Chicago office of William Carter Co., Needham Heights, Mass., before his retirement last year.

W. Valley Gilmore, 52, superintendent of Harris Mill, Greenwood, S. C., and former superintendent of Judson Mills, Greenville.

Charles Franklin Harry, 66, founder and president of Minette Mills, Inc., Grover, N. C.

Robert Edgar Hightower, 62, president of Thomaston Mills, Inc., Thomaston, Ga.

Lafayette Johnston Magill, chairman of the board and former president of Atlanta Hosiery Mills, Atlanta, Ga.

Raymond Hewitt Merritt, 36, superintendent of the rayon division of Virginia Mills, Inc., Swepsonville, N. C.

John Nelson, 70, foreman of the experimental department of the Universal Winding Co., Providence, R. I.

Israel Noble, 65, president of Noble Knit Mfg. Co., New York, N. Y.

Edward F. Parks, 85, former chief engineer, plant manager, and member of the board of directors of Universal Winding Co., Providence, R. I. He retired a year ago after more than 50 years with the company.

Pierre Pozier, 74, chairman of the board of F. Schumacher & Co., New York, N. Y.

Edgar A. Reilly, 52, president of the Fullerton Textiles, Inc., Fullerton, Pa.

Dr. Charles J. Sala, 61, dye expert in the Organic Chemicals Department of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Allan Cameron Sargent, 93, president of C. G. Sargent's Sons Corp., Graniteville, Mass.

Edward T. Schumacher, 82, manager of the woolens department of A. D. Juilliard & Co., New York, N. Y., for 40 years before his retirement eight years ago.

Franklin P. Selby, 58, head dyer of Celtic Knitting Co. Ltd., Montreal, Que.

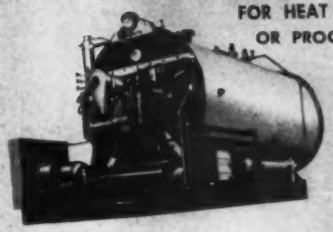
Nelson M. Smith, 56, retired sales executive of Smith, Drum & Co., Philadelphia, Pa., and last surviving son of Robert P. Smith, one of the founders of the company.

Hubert Taylor, 52, former superintendent of the bleachery of Powdrell & Alexander, Inc., Danielson, Conn.

Edwin F. Welch, former overseer of carding at Cheshire Mills, Harrisville, N. H., and Firth Carpet Co., Firthcliffe, N. Y.

STEAM

FOR HEAT OR PROCESS



A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 318

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SUPERIOR STEAM GENERATORS

42 STOCK SIZES

SOLID STEEL COLLARS

Precision machined for shafts from 5/16" to 3" diameter inclusive. Fitted with the famous self-locking UNBRAKO Socket Set Screw—the screw that positively won't work loose. Write for descriptive literature and the name of your local distributor. STANDARD PRESSED STEEL CO., Jenkintown 35, Pennsylvania.

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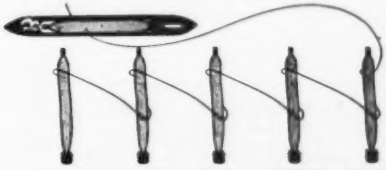

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For all types of yarns, for best loom efficiency and less seconds. New Zealand brown or gray o'possum—muskrat—sheepskin—in any form.

Strips of any width or length, or in whole skins, sheared or unsheared. Prompt Delivery.

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McGraw-Hill Publishing Co., Inc.

DIRECT MAIL DIVISION

330 W. 42nd Street, New York 36, N. Y.

Direct Mail Division, McGraw-Hill Publishing Co.
330 West 42nd Street, New York 18, N. Y.

Please send me, **at no cost**, mailing list information that will cover my markets.

Name ..... Title.....

Company .....

Address .....

City and State.....

Product or Service.....

. . . YET SCRAP INVENTORIES ARE ALARMINGLY LOW. YOU ARE BEING COUNTED ON TO HELP KEEP THE FURNACES WORKING . . . TO AID DEFENSE

With our increased steel production, the furnaces are gobbling up an enormous amount of iron and steel scrap.

More—far more—scrap than is at present going into their scrap stockpiles.

Many mills are operating on a hand-to-mouth basis. Some are already threatened with shutdown—for lack of scrap.

The Danger Is Increasing

Will efforts to fill the tremendous demands for steel fail because of lack of scrap?

Steel is made from 50% scrap. We could be severely handicapped—in our aim to keep abreast of both military and civilian requirements—if scrap suppliers can't keep pace with productive capacity.

But they *can* keep pace . . . with your help!

Enough Scrap IS Available!

Yes—the only problem is to get the available extra scrap from where it is—to where it's needed.

Where is it?

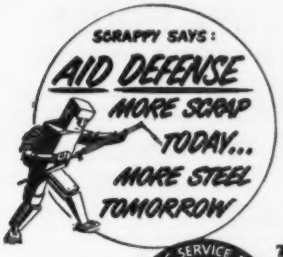
In *your* business . . . in the form of old machines and equipment, tools, implements, dies, jigs, fixtures, outmoded structures, chains, valves, wheels, pulleys—any old iron and steel that's rusting away.

Six Million EXTRA Tons Needed!

By the end of 1952, we'll be producing steel at an annual rate of 20 million tons more than in 1950. That means we will need at least 6 million more tons of scrap than we've ever needed before.

It's up to you. Write at once to Advertising Council, 25 W 45 St., New York 19, N. Y., for a free copy of "Top Management: Your Program For Emergency Scrap Recovery".

Please write today—there's not a day to lose.



NON-FERROUS SCRAP IS NEEDED, TOO!

This advertisement is a contribution, in the national interest, by

McGRAW-HILL PUBLISHING COMPANY, INC.

330 WEST 42nd STREET NEW YORK 36, N.Y.

For more information, write direct or use Reader Service post card.

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT: BUSINESS: **"OPPORTUNITIES"** :EQUIPMENT :USED OR RESALE

UNDISPLAYED —RATES— **DISPLAYED**

$1.20 per line, minimum 3 lines. To figure payment count 5 average words as a line.

POSITIONS WANTED and Individual Selling Opportunity undisplayed rate is one-half of above rate, payable in advance.

Box Numbers—count as one line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

Individual Spaces with border rules for prominent display of advertisements.

The advertising rate is $10.40 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on one column, 3 columns—30 inches—to a page.

NEW ADVERTISEMENTS received at the New York office, 330 W. 42 St., N. Y. 36, May 16th will appear in the June issue subject to limitation of space available. T.W.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED: A Good Boss Finisher who is able to finish on all kinds of fabrics made in a Plush Mill. P-3651, Textile World.

WANTED: TIME Study Engineer. Thoroughly experienced in all phases of incentives and methods improvement. Textile background preferred. Philadelphia area. Top flight employer. Send resume of experience. P-3815, Textile World.

SELLING OPPORTUNITY OFFERED

REPRESENTATIVES TO Sell for manufacturer of cotton mercerized soft and Glace; Nylon; Orlon sewing threads to commercial users. New York state, Cleveland; Chicago; Southern States. Proven sales ability and following are required. There is an assured income with a commission basis for incentive. Our representatives know of this Ad. Please reply to RW-4011, Textile World.

POSITIONS WANTED

COTTON SPINNING Technician, over 20 years experience in mill operations, High Caliber Production & quality record. Experience in Plant erection & help training. American & European machinery. Synthetic fibers. Desires Supervisory position in Latin America or Domestic Mill. Speaks fluently Spanish, married. References on request. PW-3820, Textile World.

EXPERIENCED EUROPEAN first class Textile Expert designer and technical manager, spinning and weaving of woolens and worsteds, brunn graduate, age 40, with 25 years practice, thoroughly trained and experienced in production and supervision, versed in up to date achievements in machinery, raw materials and styling, speaks several languages, now in leading position in the middle east, wishes to change his employment for South America, U.S.A. or Canada. PW-3984, Textile World.

MILL SUPT. Technician or Gen. Supt. Experience silk, rayon, plain Jacquard, upholstery and throwing. Available. PW-3990, Textile World.

RAYON THROWSTER desires position with a reputable throwing concern. Thoroughly trained and experienced in Production & Supervision. Forward thinking, modern & practical in all phases of throwing. Employed at present. Married. References. PW-2831, Textile World.

WORSTED YARN Supt. experienced Bradford, French, and American systems on Knitting, Weaving, and novelty yarns of wool, synthetics, and blends. Textile education. Young. Aggressive. Best references. PW-3480, Textile World.

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AGGRESSIVE SALES Organization in Philadelphia desires another line, preferably in the chemical raw materials field, to handle in this territory. Established over 25 years. Have developed good buyer contact. RA-3929, Textile World.

TEXTILE PLANT WANTED: We are now manufacturing over $20,000,000 in various lines and wish to expand by acquisition of assets or stock of one or more industrial companies. In our negotiations the seller's problems and wishes will receive full consideration. Present personnel will normally be retained.

Address all replies

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733 Broadway, N. Y. 7. N. Y. GA 7-1819

VISCOSE STAPLE PLANT

TECHNICAL SUPERINTENDENT

To have full charge of technical procedures, production methods, quality control and research and development. Graduate chemist with experience in above fields of viscose rayon or staple manufacturing.

Good opportunity for younger man seeking advancement.

Address application in full confidence to

PLANT MANAGER
THE HARTFORD RAYON CORP.
Rocky Hill, Connecticut

SILK MILL SUPERINTENDENT

Well established firm offers outstanding opportunity to experienced superintendent capable assuming complete charge of yarn dye shaft and jacquard mill. This is an excellent situation for the right man who is looking for a position that is permanent and lucrative. Replies confidential.

P-4035, Textile World
330 W. 42nd St., New York 36, N. Y.

DESIGNER

For manufacturer in Southern New England. Minimum qualifications: Textile school graduate in design, at least one year's experience in new fabric development on flat goods and pile fabrics. Give full details on experience, personal data, salary expected, etc. Reply

P-4045, Textile World
330 W. 42 St., New York 36, N. Y.

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EATON & BELL

Patent Attorneys

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753 Munsey Bldg., Washington, D. C.

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Rayon Plants & Textile Mills

- Design
- Construction
- Management

1200 N. Broad St., Phila. 21, Pa.
Offices Throughout the World

AVAILABLE

DYEHOUSE PERSONNEL

A large synthetic yarn manufacturer is terminating operation of one of its Dyehouses. Immediately available are employees in the following fields of experience:

1. **Dyers and Finishers of all types of synthetic fabric constructions to meet all end uses.**
2. **Jig, box and pad operators.**
3. **Finishing equipment operators.**
4. **Fabric Examiners educated in point grading for yarn, weaving and dyeing faults.**
5. **Warehouse men with a knowledge of receiving raw fabric through to customer shipments, billing, invoicing, etc.**
6. **Expediters—trained men in fabric movement covering inventory and fabric movement to assure scheduled deliveries.**
7. **Technical men—3-4 technical men used in development work in various phases of Dyehouse production.**
8. **Laboratory Assistants, routine laboratory work, testing dyes, etc.**
9. **Color Stores men.**

PW-4055, Textile World
330 W. 42 St., New York 36, N. Y.

ROLLINS

Fleet Leasing

Five or More Cars and Trucks Leased Yearly for Business Purposes.

No Capital Investment
100% Tax Deductible

New cars yearly • Unlimited mileage • Better employee relations! • Save thousands of dollars!

Rates as low as $1.77 per day

Write for transportation survey to Dept. TW-5

BOX 127, REHOBOTH BEACH, DELAWARE
Phone 3261

WANTED TO PURCHASE

DYE HOUSE

IN CURRENT OPERATION

Building of approximately 20,000 sq. ft., equipped with dye tubs (no jigs). Drying equipment must be suitable for finishing wide fabrics. Inclusion of nylon heat setting equipment preferred. Proper water and disposal facilities. Good labor area. New York, New Jersey, Pennsylvania or Delaware. Principals only.

Call Robert Walter,
Longacre 4-2260, or write at
8 West 40th St., New York 18, N. Y.

AMERICAN VISCOSE

50,000 lbs—75/30/2½ Bright sub-standard cakes, original cases—68¢ a lb

FS-3580, Textile World
330 W. 42 St., New York 36, N. Y.

MEN WANTED

POSITIONS OPEN

We can place: **MANAGER**, Supt. and asst. supt. large rayon-cotton yarn and cloth mills; supt. and asst. supt. for rayon-cotton piece goods dyeing, bleach and fin. plants; tricot mill mgrs., supts., overseers and fixers; supt. worsted-woolen finishing; supt. knit glove mill; supt. yarn dyed silk fabric; office mgr. and accountant southern cotton mill; woolen mill office mgr. and accountant; worsted dress goods and men's wear designers; pile fabric designer; raw cotton expert, sales analysis work; designers for floor and wall covering materials; mgr. rewinder mill; supt. narrow fabric mill.

OVERSEERS FOR FOLLOWING DEPTS.: silk throwing, shoddy carding, wool scouring; finishing wool jerseys; fancy worsted and woolen twisting; worsted spin., twist. and wind.; jig dyeing; woolen carding 3rd shift; glove knitting; plush dyeing; cotton weav., slash. and cloth room combined; silk spinning, coning, throwing and quilling combined; woolen carding and spinning combined; also asst. overseer cotton finishing and piece goods bleaching combined.

SECOND HANDS FOLLOWING DEPTS.: woolen carding; cotton bleaching and mercerizing; cotton weaving Draper and C. & K. looms.

CHEMISTS, chem. engineers, laboratory technicians; time study and industrial engineers; quality control engineer; viscose engineer; master mechanics, plant engineers, designers and draftsmen; salesmen for machinery, chemicals, finishing materials, cotton piece goods; wool waste, clips, rags, etc.; text. school grad. with or without practical experience; fixer Wilton looms; woolen card fixer; woolen mule fixer; sewing mach. fixers; hosiery mach. fixers; fixers for Scott & Williams, glove, Wildmen, Brinton, Supreme and Komet machines.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the textile mills.

CHARLES P. RAYMOND SERVICE, INC.
294 Washington St. Boston, Mass.

Specialists in Placing and in Supplying Textile Mill Executives

FINISHER WANTED—

experienced in resin finishing and nylon setting—permanent position in New York City—give full details in application.

P-3980, Textile World
330 W. 42nd St., New York 36, N. Y.

WANTED

INDUSTRIAL ENGINEER

Excellent opportunity for a graduate mechanical or industrial engineer with a leading acetate yarn producer.

The position is a permanent one in a growing organization and offers a real challenge to an ambitious man. One or two years' industrial engineering experience required, including experience in making cost reduction studies, time and motion studies, and setting work standards.

State full particulars of education, experience, and salary wanted in application letter.

P-4010, Textile World
330 W. 42nd St., New York 36, N. Y.

ARE YOU

or can you become

ONE OF THESE MEN?

We are large producers of rayon yarn, our products going principally into the following end-uses: Textile Yarns—for weaving and knitting; Heavy Denier Yarns—for industrial uses, chiefly as tire cord fabric; Knit Cloth—which we sell dyed and finished for women's and children's undergarments.

We also have under way active research programs for the development of new man-made fibers.

Because of growth in all of these activities, we want to expand the personnel of our Service Departments.

The requirements call for both experience and youth—under 35 would be a good age.

Man #1 To do field service among our weaving customers and participate in important development work on new synthetic fibers. This man should be a graduate of a technical or general college with experience in spinning and weaving.

Man #2 To specialize in the servicing of tire cord and participate in the development of other industrial uses. This man should have the equivalent of a college education and good knowledge of weaving mill techniques.

Man #3 To service our knit fabrics, which are sold to the ladies' underwear market, as well as yarns going to hosiery and outerwear knitters. This man should have knitting experience. A good educational background, technical or general, would be helpful.

If you are, or believe you could become, one of these men, write to us giving all pertinent information—personal facts, education, experience, and an idea of the salary you would expect. If your letter suggests a likelihood of our getting together, a personal interview will be arranged at your convenience. Your communication will be held in strictest confidence. Address your letter to: Vice President in charge of Merchandising, Dept. F.

INDUSTRIAL RAYON CORPORATION
NEW YORK OFFICE: 500 FIFTH AVE., NEW YORK 36, N. Y.

18 ATWOOD Model 110 1 lb. TWISTERS — 200 SPINDLES D. DECK—5½" GAUGE MOTORIZED

14 ATWOOD - UTILITY D. DECK TWISTERS — 176 SPINDLES—2 MOTORS ½ LB. PER FRAME

15 MONARCH - ATWOOD ½ LB. D. DECK TWISTERS — 200 SPINDLES PER FRAME MOTORIZED—5 H.P. MOTOR

23 ATWOOD ½ LB. D. DECK TWISTERS — 2 MOTORS PER FRAME

ALL TWISTERS WITH LARGE SPINDLES—IN EXCELLENT CONDITION—BOBBIN EQUIPMENT

2—12 Fly Fletcher
1— 8 Fly Fletcher
6— 4 Fly Atwood
REELERS

8 FOSTER 25 SPINDLE MODEL 76 SIZING MACHINES — MOTORIZED—EXCELLENT CONDITION

75 UNIVERSAL #50 CONERS
6 SPINDLES PER MACHINE—3-30—GEAR GAIN—MOTORIZED—SOME COMPLETE WITH EMULSION TROUGHS AND ROLLS.

100 DRAPER 64" LOOMS XD — 1948 MODEL—MOTORIZED

1 1949 LYDON CAKE OR SKEIN DRYER — 2 unit, complete with trucks, instruments and poles. Like new condition

2 JOHNSON 7 CAN 52" SLASHERS
Complete with Brown individual can control panel board, narrow fabric multi-beam set up, desirable for drying unit.

PHONE 3-7497 — *Wm. Rabinowitz & Sons* — PHONE 3-7498
214-222 HAMILTON STREET • ALLENTOWN, PA.

IMMEDIATE DELIVERY

1—64" x 40' Tenter Frame, S. S. Clips, M. D.
1—V. V. Palmer Quetch Unit 64" with Compensator and Blanket, M. D.
2—New 65" Simpson Winder-Batchers with cut off knives, ball bearing rolls, cut gears
1—48" Hercules Extractor, Monel Basket, 4 Speed late type, like new
1—80" Beamer with enclosed B. B. Reeves, M. D. reverse switch
1—50" Single Color Print Machine $750.00
1—54" K. & G. Embosser, M. D.
1—25" Gal. Mixer Copper Jacketed
1—Set 8 Copper Dry Cans 60"
1—Set of 6 Copper Dry Cans, 50" x 30" Dia.
2—Dinsmore Bicycle Sewing Machines $50.00 each
1—48" Hermes Inspection & Meas. Machine $200.00, M. D.
1—44" P. & W. Inspection & Meas. Machine, M. D. $150.00
1—50" Padder, 2-Roll, $400.00
1—36" Extractor, Copper Basket, M. D.

FOR LEASE: Dyeing & Finishing Plant equipped to do 800 pieces daily. Excellent conditions.

A & M BLANK CO., INC.
301-313 East 22nd St. (at 7th Ave.) Paterson, N.J.
SHerwood 2-1367-8

USED EQUIPMENT
AVAILABLE IMMEDIATELY

Item H-FC
6—S.A.G. FRENCH COMBS
Year 1948
Wide Model
30½" x 12" can
22" x 23" apron

Item L-WQ
WHITIN QUILLER—MODEL J
304 Spindle
3½" Gauge—10½" Traverse

Item 9841
WHITIN TAPE CONDENSER
Cotton
Model "C"—Serial 423000 Series
40" Width
48 Ends

Item H-WC
2 WORSTED CARDS
2 Cylinder—Davis & Furber
54" Diameter x 54" Face
With Bramwell Picker Feed
Balling Head Delivery

COLLINS & AIKMAN CORP.
Sales and Salvage Department
6th & Upland Aves.
Upland, Delaware Co., Pa.
Phone—Chester 3-4167

MACHINERY FOR SALE
EXCELLENT TEXTILE FINISHING MACHINERY

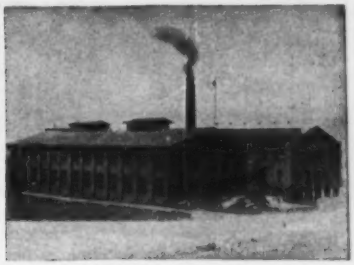
1—2 Roll Calender 60" 1 Chrome Plated Top Roll 1 Paper roll 57", Bottom roll
1—3 Roll Calender 65" Face Top Roll 90" x 50" Circumference, Middle Roll Chilled Iron 52" Cir. 7 Shaft, Bottom Roll Chilled Iron 53" Cir. 9" Shaft
1—3 Roll Textile Friction Calender Frame, top Roll 50" Chilled Iron, Middle Roll 50" Brand New Husk Roll, Bottom Roll 50" Chilled Iron
1—National Color Grinder 40" face 3 rolls Iron
2—70" Hone Pantographs
1—40" B.B. Scutcher
1—5 Copper Cans 52" Chas. Johnson Sizing Machine 5 HP, 550 Volts, 60 Cycle, 3 Phase—BB Quetch and bearings
1—60" Batcher for Rubber Goods
1—50" Squeeze Set with Rubber and steel Roll
1—56" Curtiss and Marble Calender Machine
3—40" Embossing Machines (Meadow)
1—50" 3-Roll Calender
1—61" 2-Roll Calender
1—50" 3-Roll Friction Calender

Wire—Write—Phone
TEL. UNION 1-0050

TEXTILE FINISHERS EQUIPMENT
144 WEST RIVER ST.
PROVIDENCE, R. I.

Executive Offices and New York Warehouse

McDOWELL ASSOCIATES INC.



Hudson, New York Warehouse

FOR SALE

PARTIAL LIST - - - IMMEDIATE DELIVERY

DYEING AND FINISHING

2 BATCHERS, single drum 66"—79"
2 BEAMERS 60"—72" clocks, etc. M.D.
1 BOIL-OFF UNIT 5 drum S.S. 66" M.D.
1 BRUSH vertical 2 roll 57"
1 BRUSHING AND SINGEING MACHINE 65"
1 BRUSHING MACHINE 76"x26" dia. B.B. cyl., V-belt drive
1 BUTTON BREAKER 19 brass rolls 50" M.D.
1 CALENDER 3 roll, 43½" friction type
1 CALENDER Hydr. 3 roll 60" M.D.
1 CALENDER Embossing 54", #2 Tree Bark Pattern, M.D.
1 CALENDER Embossing 72", Cobra Grain Pattern, M.D.
2 CHINCHILLA MACHINES 80" platens, etc.
1 CUTTING MACHINE 3 roll 72" with 2 roll wind-up, M.D.
1 COTTAGE STEAMER 160"x48½" steel construction
1 SEMI-DECATUR 72"x36", pump, leader, etc., M.D.
1 SPONGING MACHINE 2 cylinder 72", M.D.
1 DEWING MACHINE 60", brass discs
1 DOUBLING, WINDING AND MEASURING MACHINE 66", M.D.
1 Reeves DRIVE #2—Class F
35 DRY CANS 60" tinned steel
1 P&S Drum DRYER Knit Goods 72"x108" dia. cyl.
1 Package DRYER 24 trays, temp. controls, etc.
1 Pin Tenter DRYER 72" cloth, M.D.
1 Skein DRYER 4 truck machine
1 Skein DRYER Continuous, 63' long, controls, etc., M.D.
1 Raw Stock DRYER 8'x5' sections, rotary feed, squeeze rolls, 10 fans, M.D.
1 DYE KETTLE 6 string, S.S. lined, M.D.
1 Package DYEING MACHINE 200 lbs. S.S.
1 Package DYEING MACHINE 400 lbs. S.S.
4 Skein DYEING UNITS Cascade, 3—7—12—20 arm machines.
1 Rotary DYEING UNIT S.S. 200 lbs.
1 EXTRACTOR 50" monel basket M.D.
1 FOLDER 48¾" adj. 1—1¼ yard, M.D.
1 FOLDER 78" adj. ½—1 1/8 yard
1 FOLDER ceiling type 66½"
1 FULLING MILL new 26B, S.S. tank, M.D.
1 FULLING MILL 8 string, rubber rolls, M.D.
2 INSPECTING AND WINDING MACHINES 80" cloth
1 INSPECTING MACHINE Nx. type 72", M.D.
4 JIGGS S.S. 60", M.D.
1 JIGG S.S. 80" M.D.
2 Bleaching KIERS, top opening 8'x10'—9'x9' S.S. coils
1 MEASURING UNIT 60" with doubling attachment, M.D.
1 MANGLE 2 roll rubber and brass 51¾"
2 MIXING KETTLES 26"x27", pumps, etc.
1 D&F NAPPER 72" S.A. 14 roll
2 Gessner NAPPERS 66"—80" D.A. 18 roll
1 D&F NAPPER 98" D.A. 24 roll
1 Woonsocket Felting NAPPER 22 roll 60"
1 Gessner NAPPER 80" D.A. 20 roll
1 D&F Knit Goods NAPPER 20 roll 80"
1 PADDER 2 roll 50" M.D.
1 PALMER-TENTER UNIT 60" with 9 S.S. dry cans
1 PALMER-TENTER-QUETCH UNIT, tenter 40'x52"
2 POWER PERCHES 93½" F&R treadles, M.D.
3 Rotary Steam PRESSES 69"—72"—86", M.D.
1 PRINT MACHINE 7 color 44" blanket, dryer, washer, etc.
1 PRINT MACHINE 3 color 60" back rigging, dry tower, etc.
2 Nash Hytor Vacuum PUMPS #2-L3
1 Toledo Dial SCALE portable, 125 lb. cap.

LIQUIDATING
COMPLETE WORSTED MILL
APPROXIMATELY 8500 SPINDLES
FROM SCOURING THRU SPOOLING
MACHINERY WELL MAINTAINED
CAN BE INSPECTED IN OPERATION

1 SEWING MACHINE portable Rotary, Merrow 60-3B head, M.D.
6 SEWING MACHINES Rotary foot power
4 SEWING MACHINES Railway, portable, 54"
1 SCOURING UNIT Raw Stock 3 bowl 36", M.D.
1 SCOURING UNIT Skein 2 bowl 30" width, M.D.
3 SHEARS Double Cutter 40"—60"—66½", M.D.
1 SHEAR 4 blade 58" cloth, M.D.
2 SHEARS Model A, double blade 66½", M.D.
1 SHEARING STEAMING AND BRUSHING RANGE 66½"
1 SINGER 4 burner 72" M.D.
1 SLASHER 5 drum 52" sizing unit, kettle, etc., M.D.
1 SLASHER Hot Air, takes beam 84"x30" flange
1 SLASHER 9 can 82" takes beams 80"x28" flange
1 SLITTER 72", ¾" cut, M.D.
1 Raw Stock Pneumatic SQUEEZE EXTRACTOR 2 roll, 60".
3 SQUEEZE SETS 2 roll units 50"—60"—65", M.D.
1 SQUEEZE SET 3 roll 75", 2 rubber large dia. rolls and 1 brass roll
2 STEAMING UNITS (Londonizing) 72"—80", M.D.
3 TEASLE GIGS 6 contacts 75"x38" dia. cyl.
1 TENTER FRAME 20'x60" S.S. clips
1 TENTER FRAME 40'x54" S.S. clips
2 TENTER FRAMES 100'x54", #5 Wallis
2 WINDERS 50"—60", clock, etc.
1 WASHER 3 compartment, rope, 40"
1 WASHER 2 tank unit 84"

CARDING AND SPINNING

6 BALLING MACHINES 16 spdls. ea.
10 Waste End BLOWERS, nozzles, motors, etc.
1 CARD Iron 2 cyl. 48x60 rubb condenser
8 CARDS Iron 2 cyl. 60x48 rubb condensers
8 CARDS Iron 3 cyl. 60x60 tape condensers
2 Upright CONDENSERS return air type
4 Ceiling CONDENSERS 18"x36"
2 Tape CONDENSERS 60" single rubb 96 ends
3 CONDENSERS 60" Rubb 80 ends
1 DUSTER 10' Cone, M.D.
1 Card FEED 60" Model EL
2 FEEDS Picker 54"—60"
8 Scotch Center Draw FEEDS 48"
1 GARNETT 2 cyl. 20x60 double doffer
2 GARNETTS 3 cyl. units 30x60
1 GARNETT 4 cyl. 30-60
1 Floor Card GRINDER 60" screw type
4 MULES 360 spdls. ea. 2¼" gauge, 1945 model
9 MULES G.P. 360 spdls. ea. 2½" gauge, 1946 model
3 MULES G.P. 270 spdls. ea. 3" gauge
1 Wool OPENER B.B. double cyl. 48x36 V-belt drive
2 PERALTAS 60" late model, center draw
1 PICKER 60" S.S. pins
3 Burr PICKERS 24"—36"—39"
1 PICKER Featherweight 48x48
4 Rag PICKERS 18"x30" dia. cyls.
1 Waste PICKER 20"x30" dia. B.B. cyl.
1 SHREDDER cyl. 60"x30" dia. with breast, etc.
3 SPINNING FRAMES Wool, 180 spdls., 4" gauge, M.D.
6 SPOOLERS 43¾"x12", detector, signal device, yardage stop, etc.
3 TWISTERS Model 38 180 spdls. ea., 4" gauge
2 TWISTERS 132 spdls. ea. 5½" gauge
1 TWISTER Fancy 1947 Model 180 spdls., double roll, 4½" gauge
2 WARP REELS 82" brass plate, pin type, beamer, compressor, etc.
2 Universal #30 WINDERS 20 spdls. ea., M.D.
1 Cone WINDER 16 B.B. spdls., M.D.
3 Foster Model 12—30 WINDERS 40—60—100 spdls. units
4 Foster #35 Skein to Cone WINDERS, 40 spdls. ea.
4 Foster Model 101 Cone WINDERS, emulsion troughs, 100 spdls. ea.
1 WINDER Bottle Bobbin type 40 spdles.
2 Lazenby Cop WINDERS 30 spdls. units

LOOMS

140 Draper XD 64", M.D.
60 Draper D, 2 har. 66" B.D.
16 C&K C-4 auto. 48" M.D.
92 C&K S-5, 2x1, 54" M.D.
150 C&K S-3, 2x1, 58" M.D.
40 C&K 82", 4x1, 25 har. M.D.
72 C&K W-1 82" V.B., 4x1, auto., 25 har., M.D.
24 C&K W-3 84" auto., 4x1, 25 har., M.D.
24 C&K W-3 68" auto., 4x1, 25 har., M.D.
10 C&K W-3 92", Bijur lubricators, auto. 4x1, 25 har., M.D.

McDOWELL ASSOCIATES, Inc.

2568 Park Avenue — Bronx 51, New York

Tel.: MElrose 5-6741

NEW AND USED TEXTILE MACHINERY BOUGHT AND SOLD

HERE IS A PARTIAL LISTING OF SOME OF THE FINE EQUIPMENT THAT WE HAVE IN STOCK.

152—C & K, 2x1, 53 automatic shuttle changing motorized looms, weave 52" and 54" cloth. Complete.
112—C & K, 2x1, 5-5 automatic bobbin changing motorized looms, weave 52" cloth. Complete.
48—C & K, 5-5, 2x1, 56" motorized automatic bobbin changing looms. New.
96—C & K, 2x1, automatic bobbin changing looms, weave 50" cloth complete. Motorized.
12—C & K, 4x4, 68" intermediate gem head motorized looms complete, weave 64" cloth.
10—C & K, 4x4, 72" intermediate gem head motorized looms, weave 68" cloth.
48—Atwood (Monarch type) 184 spindle double deck spinners, motorized.
168—Draper XD practically new 64" automatic bobbin changing looms.
72—Draper XD practically new 52" automatic bobbin changing looms.
48—Draper XD practically new 48" automatic bobbin changing looms.
1—Sipp 8 yard 101" magnesium frame high speed warper, practically new.
3—Johnson 5 can 60" slasher complete, silk system.
2—Van Vlaanderen 5 can 60" slashers, silk system, complete.
2—Cocker 60" 5 can slashers, cotton system, complete.
1—Johnson 60" 5 can slasher complete, cotton system.
1—2 cylinder 20"x60" Smith & Furbish Garnett machine, equipped with speed reducer excellent condition.
Complete line of Universal #80 quill winders, #50 cone winders.
New loom parts and supplies, harness frames, heddles, bobbins, etc.
Large assortment, stainless steel, steam jacketed kettles, 40, 60, 80 and 100 gallon capacity complete with lids, stands, safety and drain valves.
100—Draper 52" XD automatic bobbin changing motorized looms, complete, practically new.
24—XD, 2x1, 50" automatic bobbin changing looms, complete, practically new.
24—XK, 44" automatic bobbin changing motorized looms complete, excellent condition.
2—Johnson 7 can stainless steel 30x60 cotton system slashers, 12 beam racks, complete, practically new.
168 spindles Whitin Schweiter automatic quill winders, late type.
1—Sipp high speed warper and cone new. (Warper 54½" creel 1008 creel, cotton system, practically ends)
Also, other cone creels and warpers available.

SHAFFER & MAX INC.

33-37 N.Third St., *Tel: 4-9434* Allentown Pa.

FITZGERALD has for sale:

1—Morrison 40'x60" Tenter, Enclosed Gears, Rebuilt Chain, Reeves and Motor
1—Winsor & Jerauld 30'x50" Tenter, Gas Burners, Motor Driven
3—Dinsmore Bicycle Type Model DGF-9 Portable Sewing Machines
1—Grand Rapids 3-roll 42" Knit Goods Calender, Motor Driven
1—Hermas 4-Blade 48" Vertical Shearing Machine
2—Waterproofing Ranges for 40" and 96" Fabrics
2—Waxing Ranges for 40" and 80" Fabrics
1—Permutit (Zeolite) Water Softening System, 50,000 Gallon Capacity
1—Open Soaper, 8 Compartments, 48" Face Nip Rolls
3—Water Mangles, 3 Rolls Each, 48" Face Rolls
1—Vertical Set of 36 Copper Dry Cans, 50" Face, Reeves Drive, Etc.
1—Complete Paint Unit including Roll and Ball Grinders, Filter Presses, Pulverizers and Laboratory Equipment
1—Complete Knit Goods Finishing Unit, Stainless Steel Equipment

James E. Fitzgerald 10 PURCHASE ST., FALL RIVER, MASS.
Telephone 8-5616
SPECIALIZING IN BLEACHING, DYEING AND FINISHING MACHINERY SINCE 1920

MILLER MACHINERY CO.

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Tel. Sh 2-5467-8

Textile Machinery and Supplies

BOUGHT AND SOLD
Warpers • Winders • Quillers
Looms

FOR SALE

High speed Sipp Eastwood Horizontal Warper, type DY, all metal 101 inches wide (1948). 848 End, type DX, Sipp Eastwood magazine cone creel complete with electric stop motion (1948).

CARL JOSEPH & CO.
2 Ackerman Avenue Clifton, N. J.
Gregory 3-2818

FOR SALE

Textile Silk Screen plant being dismantled ¾" wool felt canvas 60" wide, dyes, chemicals, squeegee, registers, extractor, automatic steam boiler, plywood etc. for sale.

Write H. FRIEDMAN
4538 York Rd. Phila. 40, Pa.

FOR SALE

2—Barber-Colman LS Portable Knot Tyers.
2—Universal 44 Roto Coners 100 spdles ea.
3—Universal ZB Tube Winders 6 spdles ea.
3—Luther 2-Brush Thread Dressers.
1—Hygrolite Machine for setting twist.
800—Fibre Roving Cans 12" x 36".

JAMES SPEED & COMPANY
522 Andover St. Lawrence, Mass.

PATTERN WHEELS FOR SALE

20° jack wheels, also solid cut wheels for 16" and 24" Brinton or Supreme sinker top machines, 96 cut to 142 cut. Wheels in excellent shape, practically new.

WARREN FABRICS CO. INC.
West Warren, Mass.

TRADE WITH BAUER

BUY - SELL - TRADE
your
COMPRESSOR VACUUM PUMP STEAM BOOSTER
L.W.BAUER
261 ESSEX AVE. BLOOMFIELD, N.J.

MACHINERY LIQUIDATING COMPANY

A FEW ⟨MLC⟩ OUTSTANDING VALUES

ITEMS BELOW PRACTICALLY NEW CONDITION

1—60" Morrison 15-T 2-roll Padder, top roll 20" rubber, bottom 20" S/S.
1—60' W&J Clip Tenter Frame, 60" opening, with Andrews & Goodrich Super dryer housing.
1—Reliance Elec. Co. Adjustable Speed Drive for variable speed synchronization of above.
1—60" P&S Roller Curer
1—100" P&S Rev. Stick Loop Dryer
1—72" James Hunter Multi-Pass Pin Tenter Dryer
1—60" Hinnekens 20' Tenter with stainless steel clips
1—200 lb. Pegg Pulsating S/S Skein Dyeing Machine with circulator
1—Rayon Cloth Opening Range including 72" scutcher, vacuum pump, adj. vacuum box, detwister, all motors and controls.
1—60" Morrison S/S Dye Jigg
1—50" Morrison 3-roll 5-ton Microset Padder
1—Merrow Style 60 ABBY Seam Stitching Machine with safety table
1—Tillinghast #2 Master Portable Rotary Foot Power Sewer.

OTHER HARD TO FIND EQUIPMENT

1—60" James Smith 3-cyl. Garnett
60—46" Cloth Draper Model E Rayon Looms, 16 h. Mtr. Dr.
144—54" R.S. C&K S-3 2x1 Looms, 20 h.
1—Abbott 1947 Auto. Quiller
1—83" Sipp DX High Speed Warper
1—Morton S/S 300 lb. Combination Package and Beam Dyeing Machine
1—30" Sample Piece Dye Kettle S/S lined
2—48" V. Vl. Dye Jiggers
5—45"-50" 2 and 3 roll Padders
1—75" Textile 3-roll Mangle
1—Hurricane 2-compartment Dryer complete with 4 tray trucks
1—50 lb. S.D. Monel Rotary Hosiery Dyeing Machine
1—200 lb. Rome Monel Rotary Dyeing Machine
1—150 lb. Strickland monel Paddle Hosiery Dyeing Machine
2—25 lb. Butterworth monel Paddle Dyeing Machines
8—18" to 60" Tolhurst and Hercules Extractors
1—350 lb. Hussong monel metal Skein Dyeing Machine with hoist and track
3—Sets Dry Cans; 35—108" copper cans, 9—50" and 7—50" tinned iron
1—66" Pin Tenter 50'
2—80" D&F 20-roll Nappers
1—65" 3-roll Calender; top roll Chromium plated heated, center roll (new paper), bottom roll chilled iron heated.
1—45" Sturtevant motor driven Blower
1—52" C&M Flat Folder

ALSO MANY OTHER GOOD ITEMS

WANTED—GOOD SURPLUS TEXTILE MACHINERY OF ALL TYPES

MACHINERY LIQUIDATING COMPANY

A Dealer of Recognized Reliability—Domestic & Export

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WAREHOUSE—Hawthorne, N. J., 4th Ave. Phone: Hawthorne 7-4380

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

Unusual LIQUIDATION

ENTIRE EQUIPMENT OF

NEW ERA DYEING & FINISHING CO.

FAIRLAWN, NEW JERSEY

All equipment, new in 1948 or later, in perfect operating condition. Modern machines and accessories for greige processing, color mixing, dyeing and finishing. Also sewing machines, machine shop, laboratory, shipping, and office equipment. Mack trucks, Chevrolet trucks, Tow-motor and Mobilift trucks, hand trucks, unit heaters, exhaust fans and other equipment for a large, modern dyeing and finishing plant.

PARTIAL LIST OF MACHINES

Van Vlaanderen 120 ft. Super Type 66 in. Tenter Frame Unit with J box, 3 Roll Resin Impregnator, 120 ft. Tenter Frame, totally enclosed by National Drier, Synchronized by D. C. Drive.

Van Vlaanderen 14 Ton Hydraulic Calender, 65 in. Face with Expander.

Van Vlaanderen Palmer Tenter Unit with 3 Ton Quetsch, 30 ft. Tenter Frame, Gas Burner.

Hennikins Festoon Boil-offs complete with J Box, Guiders, etc.

Singer with complete Controls Exhaust Fan and Head.

Van Vlaanderen 40 ft. Steam Over Frame, with Swivel Let-off Stand, Steam Box and Gas Burner Arrangement.

Scutcher, complete with Vacuum Arrangement, Pump and Pleater Attachment.

Van Vlaanderen 7½ Ton Silk Calender.

7 Cylinder, Stainless Steel, Preset, Semi-Scour, Boil-off.

Stainless Steel Dye Becks.

For further information write or phone NEW ERA DYEING AND FINISHING CO., 20-21 Wagaraw Rd., Fairlawn, N. J. Phone Armory 4-7010 or Phone Sherwood 2-0800, Paterson, N. J.

WRITE FOR COMPLETE CATALOGUE OF MACHINES FOR SALE

SAVE WITH CONFIDENCE
OUR 35 YEARS EXPERIENCE PROTECTS YOU

50—Crompton & Knowles 52" Silk Looms, large sand roll, M.D.
30—Crompton & Knowles 72" S-1 Looms, motor driven.
1—50-Arm Porcelain Ribbon or Skein Dyer, motor driven.
1—Van Vlaanderen 60', 62" wide Tenter Frame.
1—National Stainless Steel Loop Dryer, late type.
1—Sipp Eastwood High Speed Direct Warper.
16—Ganga Universal #50 Winders, L drive, anti-wear tensions, gear gain, washboard attachments, motor driven.
6—Smith Furbish 2-cylinder All Iron Cards, 60"x48".
1—Hinnikens 51" 2-roll Ball Bearing Quetch, M.D.
1—Butterworth 3-roll 60" Hydraulic Friction Calender.
1—Butterworth 3-roll Laboratory Padder, 12", vari-drive.
1—Textile Fin. Co. 2-steel roll 150" Calender, excellent condition.

Send Us Your Inquiries

COMPLETE PLANT FOR MANUFACTURING SEAMLESS COTTON BAGS

OUR 35th YEAR
CONSOLIDATED PRODUCTS CO. INC.
13-16 PARK ROW N.Y. 38 N.Y. BArclay 7-0600

FOR SALE FOR SALE
WAREHOUSE STOCK

2—40" Kitson single process Pickers, blending reserve; 1-3 beater, 1-2 beater.
12—F-5 Saco Lowell Hoppers, 38½", Kick rolls or sargent combs.
2—Model C Whitin Return Air Condensor.
12—#90 Universal Winders, overend tensions.
Bunch builders, 8" to 9" quills, motor driven. Bale Breakers, Fans, Conveyors, Condensors, etc.

WILSON LEWITH MACHINERY CORP.
Post Office Box 4100, CHARLOTTE, N. C. Phone 4-2403 Warehouse: Wilkinson Blvd. Behind Barbeque Lodge

S&K **Where your $$$$ buy MORE**

COMPLETE DRAPER AUTO. PLANT 110 LOOMS

7000 LBS CARPET WOOL 4/19's ON CONES

300 Auto. Drapers 43" to 76" cloth
300 XD Drapers 49" cloth
140 S-3 C & K 56" R.S. shuttle changers
48 S-6 C & K 56" R.S. bobbin changers
40 C & K Woolen looms 72" to 110" R.S.

Sipp Hyspeed Warper & 1000 cone creel
72—Heads Whitin Schweiter Quillers 1947
1 Barber Coleman Warp tying machine, Model LS 1949
1 Terrell Bobbin Stripper 1949

DYEING MACHINERY

1 New 80½" Beamer
14 S. S. Cans 48"
1 80" wide Pin Tenter Frame
1 40' Hinnikens 60" frame with Gas Burners, reeves & motor
4 S.S. 60" Verduin Jiggs
1 Set Butterworth 13 Cans 144" S.S.
5 60" Hinnikens Jiggs all stainless steel
1 Paterson Examiner, 72" wide
1 72" Park Woolson Decater
1 Set 18 Dry Cans 48" face; 5 stainless steel, 13 iron tinned with reeves
8 Dye Boxes S.S. lined 8'—10'—12'
1 Jostrom fabric conditioner 64"
1 19 can Butterworth dryer 72"
1 Textile Tenter Frame 52" wide 40' long
4 Three (3) Roll Padders 45"
30 50" Dry Cans
5 Atwood 58 Twisters
9 Atwood Single Deck Utility Spinners
8 Sipp Warpers & Winders
20 #90 Universals
4 Oswald-Grundy 46—Spindle Cop Winders
11 Foster-Coners 75A
2 Johnson Slashers 7 Can & 3 Can—66"
1 Set 17 Can Butterworth 132" S.S. B.B. Motor & Reeves Drive
1 72" Greige Washer with Squeeze Rolls 24' long

STAVE & KESSLER
106 KEARNEY ST. P. O. Box 1611 Paterson, N. J.
Phone ARmory 4-7486

News of the Month

(Continued from page 258)

duction in commercial runs is said to be ready to start.

New England Sponging Plant. Before 300 New England and New York textile executives recently, a $500,000 woolen and worsted fabric shrinking and finishing plant was officially opened in a 30,000-sq. ft. mill building in Woonsocket, R. I., by Geltman Sponging Co. of Rhode Island. It is the sixth unit, the first in New England, of Geltman Sponging Corp., Cleveland, Ohio. With a capacity of over 70,000 yd. a day, the plant can guarantee pre-shrunk cloth for New York garment manufacturers' use as soon as 24 hr. after receipt of a finishing order, if need be. Alvin Geltman, son of the founder of the parent organization, is president of the Rhode Island unit.

ASME Textile-Engineering Meeting. An all-day spring conference of the textile-engineering division of the American Society of Mechanical Engineers will be held at the Sheraton-Plaza Hotel, Boston, Mass., on May 16. Subjects to be discussed are "Wool Blending" by Harmon B. Riehl of Proctor & Schwartz, Inc.; "Wool Carding" by A. W. Reynolds of Davis & Furber Machine Co.; "Woolen Carding Meets Quality Control" by C. W. Carter of Bigelow-Sanford Carpet Co.; "The Holdsworth Gill Reducer" by Walter T. Rutley of Holdsworth Gill Screw Co.; and "The Warner & Swasey Weaving Machine" by E. R. Gardner of Warner & Swasey Co. The luncheon speaker is Nathaniel M. Mitchell, president of Barnes Textile Associates. The sessions are open to the general public.

Improved Papermakers' Felt. The first successful run of a papermakers' felt made of 100% synthetic fiber has been made known by F. C. Huyck & Sons (Kenwood Mills), Rensselaer, N. Y. The new-type felt was run in the Camas, Wash., mill of Crown-Zellerbach Corp. on a modern high-speed machine making light-weight papers. Its life substantially succeeded the average felt on this position, and it gave free drainage throughout its life, with no evidence of filling. Besides providing greater resistance to frictional wear as well as freer passage of water than 100% wool or blended felts, the synthetic product is immune to attack by bacteria—a reason for short felt life in many mills, it is said.

(Continued on page 298)

COMPRESSORS
VACUUM PUMPS
— OUR 50TH YEAR —
NEW
REBUILT - GUARANTEED

HUMIDIFYING COMPRESSORS
40%—60% Savings
You Can Pay More But You Can't Buy Better
—PROMPT SHIPMENT—

FOR RENT—ANY ONE OF OVER 200 COMPRESSORS IN STOCK

Air Receivers - Aftercoolers In Stock

AMERICAN AIR COMPRESSOR CORP.
48th & Dell Ave. No. Bergen, N. J.

OUR OWN SUPPLIES PRICED TO SELL

750,000—A. L. Bobbins 9¾" (all)
2,700—Wor. Bobbins 9 x 5 wood
2,000—Wor. Bobbins 9½ x 5 (Plastic Heads)
1,500,000—Draper Drop Wires (closed) .008
125—Herr Rings and Holders 4" (like new)
10,000—Cap Spinning, tubes & whorls 1" 7/16" I. d. Lot of Dutcher temples & parts (some new)
895—Roving Cans 10" x 36"
1,000,000—Mechanical Regan Drop Wires
250,000—K. A. Elec. Drop Wires (Wor. type)

SPECIAL OFFERING
Large, Complete Bradford Worsted Unit, including finishing For Sale for Export—Write for details

WANTED—TO BUY
Lot of 12" 8'4" Flat Steel Heddles
Lot of Model 2A McMullen Spinning Spindles
24 W. 3 Looms C. K. 82"

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P.O.Box 495 Established 1920 Tel. 3-1314 PAWTUCKET, R.I.

HOSIERY MACHINES
used and rebuilt
KNITTERS—RIBBERS—LOOPERS—
CYLINDERS—DIALS—TRANSFERS
HOSIERY NEEDLES AND PARTS
JOS. BRESANI
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Phila. 33, Pa.

FOR SALE
12—Universal #50 Covers 3-30 Traverse.
12—#50 Franklin Spring Winders.
1—National Loop Dryer Stainless Steel. New 1947.
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DOYLE & MILLER
For new iron
Cylinders, Doffers, Workers, or Strippers
Sample cards, rebuilt Picker Feeds
Parts for all makes of Platt Woolen mules
Two ply flyers for yarn reels
Philadelphia 27, Pa.

286—Draper Mod. D looms, 44", 20 harness dobby. Rebuilt 1947.
260—Draper XD looms, 48", 20 harness dobby. Age 1944.
125—C&K "Cotton King" looms, 4x1, 45" cloth, 20 harness, M.D.
140—Draper XD Looms 64", M.D.
18—C&K C4 looms, 76", 1946.
48—C&K S6 looms, 52", 1947.
10—Nottingham Lace looms, 10 pt.
1—Johnson Slasher—7 stainless steel drums 62x30", Brown controls, 14 beam creel. Age 1942.
1—Reiner H.S. Warper 56" w/Sipp Creel. Age 1947.
6—Hinnekens Dye Becks, 12', 1949.

MILLS FOR SALE
Jacquard Plush Mill—100 looms
Rayon Weaving Mill—300 looms
Plastic & Cellophane Printing
Plisse Printing Unit
Franklin Package Dye Unit
Cotton Yarn Mill—15,000 spdl.

1—Butterworth Pin Tenter Frame 80' long, 90" wide w/Proctor and Schwartz 40' housing. Age 1948.
1—Textile Mercerizing Range, 60" wide, 60' tenter, s.s. Hunter Flexa-reel.
8—Werner Stainless Steel Enclosed Dye Jiggs, 50", M.D. Age 1947.
1—Van Vlaanderen Hyd. Calender, 65" wide, 8 ton, pump & motor
1—V.V. Tenter Frame 120' long w/Nat'l Housing 100', 20 fans, 64" cloth. Age 1950.
2—Hinnekens Continuous Boil Off Ranges, 66" wide x 30' long.
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8 colors—47", 7 colors—45"
5 colors—42", & 3 colors—57"

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1—50" P. & W. Semi Decator, new blanket, pump and motor.
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1—W.J. Tenter Frame, 30' x 96"
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1—Set of 21-72" x 23" Dry Cans Horizontally.
1—72" Hydraulic Padder, M. D.
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1—64" Van Vlaanderen motor driven Tuber.
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2—60" motor driven Beamers.
4—Hermes measuring & inspecting machines, tube to tube.
1—60" Measuring, Inspecting & Tubing Machine, tube to tube, new, variable speed, forward, neutral & reverse.
30-60 gallon copper steam jacketed Kettles.
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1—Sterling 7½ H. P. Vari-drive.
1—Reeves 7½ H. P. Vari-drive.
About 5,000 S. S. high speed V. V. Clips.
Agitators of various sizes.
Motors of various sizes.
New & Used Electric Hoists.

One 66"—5 Drum Johnson Slasher, Reeves Drive & Motor. In excellent condition
2-3 ft. 2-8' 1-10' 1-14' Stainless Steel Lined Dye Boxes
New Copper Rollers 16" x 60" wide, W Bore

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2 Single breaker waste Cards, all iron D.&F. 60 x 60 20" Breasts Bramwell Feeds
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1 72" Extractor Rubber lined basket
2 82" Pinless Dressing Reel units
1 92" Pinless Dressing Reel unit
4 F.&S. Ceiling Condensors
5 Sets D.&F. all iron Worsted Cards 56x48
1 D.&F. 24 roll D.A. Napper-Cone Drive
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5 D.&F. 48" Spoolers 48 ends
Quantity of Harness Frames, Spools, Mule bobbins all sizes and slightly used Card Clothing.

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WE OFFER for IMMEDIATE DELIVERY

LARGE COMB CIRCLES 25-28-30-40-42- pins per inch
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LARGE LOT OF NEW WORSTED CARD CLOTHING 25% off of list
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2 8—16 carr. ⅀2 Butt braiders, Mossbergs
1000—Mossberg ⅀2 carriers, 2BX type
10—⅀30 Universal Take winders, 3 ends
30—Textile 25, 44, & 65 carr. braiders
25—Wardwells, late type, 16 carr. 18" sheave
MICHAEL SOLOMON
131 Spring St., N.Y.C. — REctor 2-9364
Dealer-Textile, Wire & Cordage Machinery

MOBILIZATION NEWS ITEMS

Price Decontrol Requested. Three large textile groups are among those who have been requesting the government to throw out price controls over textile-mill products: The Association of Cotton Textile Merchants of New York, The National Association of Wool Manufacturers, and The National Association of Finishers of Textile Products. W. Ray Bell, president of the first group, showed point by point in a letter to Senator Maybank of South Carolina that eight objectives of Congress in passing Title IV of the Defense Production Act of 1950 had been realized, and only the ninth objective, "preventing a future collapse in values" had not been obtained. Edwin Wilkinson of NAWM showed in a visual comparison of the current price structure, both as respects military and civilian goods, that there is no valid reason, but only "existing confusion" compounded needlessly, in the continuation of worsted- and woolen-fabric ceiling prices. Sydney M. Cone, Jr., president of the finishers group, pointed out how regulation of the costing and pricing of textile finishes is a complex operation, useless now that fabric inventories are about 25% above the pre-Korean level and the market is depressed.

Negotiated Procurements. Military procurement officers now have instructions to place contracts in excess of $25,000 with manufacturers in labor-surplus areas when possible. The new regulations do not change the Armed-Services procurement regulations, it is reported, but point out how defense contracts can help in labor-surplus areas.

Advertised procurement conducted in the same manner as before. However, procurement officers can make "set asides" and solicit proposals from firms in labor-surplus areas. "Partial asides" can also be made: that is, the procurement officer can divide up a contract to get the quantity that would probably yield the most favorable price. He then advertises for bids for this quantity and holds the remainder for negotiation for production in a labor-surplus area.

The new instructions require that procurement people check qualified bidders' lists to make sure that firms in labor-surplus areas get invitations to bid under both advertised and negotiated procurements.

WANTED

WANTED

To Expedite Production Machinery

including Carding Machines, Spinners, Automatic Looms, Slashers, S/S Dyers, Extractors, Calenders, Clip & Pin Tenters, Dry Cans, Multi-color Presses.

Will consider set up plant now operating or shut down. When offering give full particulars.

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WANTED

VIGOUREUX PRINTING MACHINE

In good condition. Replies to

SPINNERS LIMITED
Huntingdon, Quebec, Canada

WANTED—SURPLUS

CHEMICALS—DYES
SOLVENTS—PLASTICIZERS
OILS—PIGMENTS—WAXES
OTHER SUPPLIES
BY-PRODUCTS—WASTES, Etc.

CHEMICAL SERVICE CORPORATION
80-10 Beaver St. New York 5, N. Y.

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

Tricot Manufacturer
is looking for a
SAMPLE TRICOT MACHINE
2 or 3 bar, preferably a 3 bar, about 30 inches wide.

W-3398, Textile World
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WANTED

NARROW FABRIC LOOM BATTENS

In good condition—must have more than 54 spaces and large quills for 15 or 18 foot looms—wire, write or phone and give complete details including price to

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"WANTED"

Modern dyeing, finishing and printing machinery for export.

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PREPARATORY

1—P.&S. 60" Card Feed (Mod. 535—Practically New)
1—Sargent 42" Picker Feed
1—Hunter 7 section Raw Stock Dryer
1—D. & F. 7' all iron Cone Duster
1—Schofield 48" automatic Duster (box)
1—Woonsocket 36" x 36" ceiling condenser & blower
2—18" x 18" P. & S. Ceiling Condensers
1—"Parkhurst" 48" Burr Picker with Feed
1—Sargent 36" Duplex Burr Picker
1—Schofield 18" x 40" Rag Picker
6—Dodge, Schofield 18" Waste Pickers
1—D. & F. 48" Fearnaught Mixing Picker
1—Card Floor Grinder 60"
2—40" Stock Blowers, B.B.
2—Opening Pickers, 40"
2—Gerry 36" Lumpers

WARPING AND WEAVING

4—D. & F. or Altemus Warpers—rebuilt to order—82"—120". Pin or Pinless
1—Globe Ball Warper & Creels
5—Draper 54" Mod. G Warpers
24—C. & K. W2, 82" 4x1 Looms
12—C. & K. W-1 76", 4x1 Looms
4—C. & K. 92" 4x1 automatic Looms
4—C. & K. 82" 4x1 automatic Looms
36—C. & K. 82" (4x4) Box Looms
2—L. & G. Chenille Cutters

WINDING

UNIVERSAL #50 & #90 WINDERS
REBUILT TO ORDER
1—Universal 60 G.F., 96 sp. Cone Winder
1—Foster, Mod. 101, 100 sp. Cone Winder
2—Foster, Mod. 12, Skein to cone Winder, 60 sp., & 40 sp.
2—J. & B. Jackwinders, 80 sp. & 120 sp.
10—Lindsay Hyde Adjustable Skein Reels
1—Whitin Quiller 2½" Gauge (long chain)
1—P.S. 132 sp. Twister 4" Ring, band dr.
1—Lazenby 15 sp. Cop Winder
1—Sargent 16 sp. Balling Machine, 1948

FINISHING

1—Gessner Mod. 20 Press, 1950
1—Hunter 28B Fulling Mill
1—Hunter Squeeze Set, 98", hydraulic
2—Birch Bros. & York, Mach. (92")
1—Woonsocket 84" D. A. Napper, 36 rolls
1—P. & W. 66" 4 cyl. Brush & Sander
2—Tenzle Gig's, double cylinder (80")
1—Yorkshire Crab 72"—3 bowl
1—Butterworth 66", 3 bowl Washer
1—S/S Lined 60" Wetting-out Tank with squeeze rolls (Pneumatic Pressure)
2—P. & W. 66" Mod. A Double Shears
2—Voelker 65½" D. B. Presses
1—Set Dry Cans (4) 27" Copper
6—Dry Cans Copper, 72" x 36"
1—Cloth Measuring & Rolling Machine 80"
2—P. & W. 66" Cloth Doub. & Meas. Mach.
1—P. & S. 2 Truck Skein Dryer

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1837 E. Ruan St. Philadelphia 24, Pa.

Phones: Jefferson 5-4771-4772

Reputable Dealers for over a quarter of a century

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1—49" Butterworth 1949 S.S. Bleaching Range
1—15 Can 72" face S.S. Horiz. Can Set with Vari drive
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102—40" Cloth Draper XD 1949 Looms
60—50" R. S. Draper Mod. E Looms, Mfrs.
36—50" Cloth C.&K. S-5 1942 Looms
90—64" Cloth Draper XD 1949 Looms
1—5 Can Johnson 52" Slasher complete with drive
1—Set 64" Squeeze Rolls S.S. Pan
1—30' Butterworth 60" Tenter Frame
1—101" DT Warper Sipp East. with 504 end Pin Creel, lge. pkge.
1—Hill 4 Spool Edge Warper
24—Spdls. 1948 Whitin Schweiter Winders
2—48 Spdl. Sipp East. DH Winders

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PROCESSING MACHINERY CO., Inc.
Specializing in Export & Domestic Production Machinery
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1—60 Spindle Universal #44 Roto-Coner
2— 6 Spindle Universal #8 Tubers
1—Landlear Spool Printer
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2—Chelmsford Balling Machines
1—40 Spindle Foster #12, Skein to Tube
1—40 Spindle Atwood 5B, Vertical Motor

Universal #50's, #90's rebuilt to specification

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Embossing Calenders from 42" to 65" wide.
1—Butterworth 72" wide, 5 bowl Chasing Calender, 2-combination rolls, 1—chilled iron roll, cottoam or gun heated steel rolls with let-off and take-up.
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4—V. V. Jiggs, 50", s.s. boxes, m.d.
8—Morrison Jiggs, 30", s.s. boxes, m.d.
1—Butterworth Padder, s.s. box, 51" face, 11" dia. rolls.
2—Allen Kiers, 6 x 8 and 7 x 8, with pump and heater, complete.
1—Textile Malt Padder, steel box, mach. cut, B.R. brass, 50" x 9½" D., T.R. rubber, 50" x 12" D., screw lever set, with 30" Platter and 10 hp motor.
1—Morrison Inspection Beamer Machine, 50" wooden expander brass tension rollers, 1 hp, 1200 rpm, 550V.
1—Schofield Inspection Machine 60" face w/ spray, 1 hp, 550V., 90# rpm.
Also, Copper Cans, any amount, horizontal or vertical stands, up to 108" wide.
2—Totally enclosed #0 Reeves Drives, vertical, connected to 7½ hp motor.

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PROVIDENCE, R. I.

(His business paper . . . of course)*

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Index to ADVERTISERS Keyed by PRODUCT

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HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service that you currently need. Then consult in the index the page numbers that are followed by that letter.

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R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production and Winding Equipment and Supplies

An * indicates additional data in the 1951-52 Pre-Filed Textile Catalog. This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

Acme Ktg Mach. & Needle Co.	285	L
Aldon Spinning Mills	283	G
Alemite Div., Stewart-Warner Corp.	138	M
Alexander Hamilton Institute	191	N
*Allis-Chalmers Mfg. Co	26-27	F Q
Allis Co., Louis	181	F
American Air Filter Co., Inc.	34	A
American Crayon Co	283	E L R
*American Lava Corp	159	L RT
American Metal Spinning & Stamping Co.	282	E
*American Moistening Co	72	A
*American Monorail Co	62	P
Am. Numbering Mach. Co.	252	E L R
American Pulley Co	257	Q
American Rieter Co., Inc	24	T
American Viscose Corp	201	G
Am. Yarn & Processing Co.	286	G
Antara Chemicals Div., General Dyestuff Corp.	169	C
*Armstrong Cork Co	60-61	T
*Arnold, Hoffman & Co	189	C
*Atkinson, Haserick & Co	20-21, 22-23	T
Atlantic Rayon Corp	236	G
Atlantic Steel Co	43	O
Atlas Electric Devices Co	262	K
*Bahan Textile Machy. Co.	227	R
*Bahnson Co.	203	A
Baker & Adamson Products, General Chem. Div., Allied Chem. & Dye Corp	205	C
*Barber Colman Co., Temperature Control	281	K
Textile Div.	269	R
Barnes Textile Associates, Inc.	272	N
*Becco Sales Corp.	197	C
Beckman Instruments, Inc.	180	K
Bemis Bro. Bag Co	210	P
Bendix Aviation Corp., Friez Instrument Div.	234	K
Benjamin Electric Mfg. Co.	128	F
*Bersworth Chemical Co.	266	C
Birmingham Committee of 100	192	N
Boger & Crawford	187	G
*Booth Co., Benjamin	170	T
Borne, Scrymser Co	177	C
*Boston Woven Hose & Rubber Co.	70	Q
Bristol Co., The	213	K

LANE

Baskets are Materially Better

Here's why

- **Over-size casters for easy running of any load**
- Full capacity bodies
- Hardwood bottoms—dual riveted—stronger than steel
- Heavy duck sleeves for holding body to frames
- Rounded bottom rivets for smooth surfaces
- Self-embedded rivets in duck prevent sharp cutting edges

Over-size casters on *all* Lane basket trucks for easy running under *any* load—that's why employees prefer Lane. All casters are securely lock-mounted on extra wide *longitudinal* shoes designed specifically to take the load—they last longer.

But did you know you can buy a *quality* Lane truck (caster for caster) for less than most other brand canvas trucks?

Investigate Lane baskets, hampers and trucks today and see for yourself why Lane is the standard of quality.

Clip the coupon below.

Lane

THE LANE BASKET

TRADE MARK

W. T. LANE & BROS., INC. Poughkeepsie, New York

Please send me further information on Lane baskets, hampers and trucks.

Name .....

Company .....

Address .....

Town ..... Zone ..... State .....

My distributor is .....

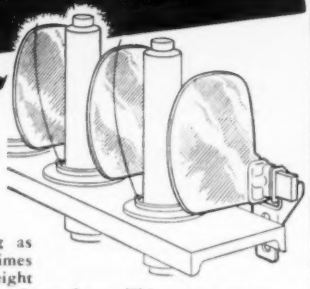
Bigger Packages ON YOUR PRESENT FRAMES

WITH LARGER RINGS, LONGER TRAVERSE AND

WHITEHEAD *Permalite*

ALUMINUM ALLOY

SEPARATOR SHIELDS



There's a shape and size that will exactly fit your requirements

They're as strong as steel but many times lighter, reducing weight as much as 250 pounds per frame. This means you can use lighter travelers, reduce wear on rings, travelers, cams, worm gears and lifter-rod bearings. Save power, too.

Permalite Shields mount right on the ring rail and can be flipped back for doffing.

And with all their superiority Permalite Shields cost no more!

ENGINEERED TO YOUR NEEDS—When ordering, specify rail width, thickness of back flange, and gage and number of rings in each rail on one side only, as 24-22-22-22-24.

EASY TO INSTALL—Simply drill and tap ring rail. We supply the shields and bar drilled to your gage and ring count, together with proper support hangers and all screws and washers.

FEATURES THAT DEFY COMPARISON

- **Fewer ends down; some mills report 27% less**
- **Solid polished blades (not slotted) mean less wear on yarn They collect less lint and fly, resulting in smoother yarn**
- **Less vibration—aluminum is self damping**
- **No attention after installation**

OVER 6,000,000 IN USE BY MORE THAN 350 MILLS

Immediate delivery from stock on all items

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ATLANTA 3, GEORGIA

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NORTHERN REPRESENTATIVE
Matthews Equipment Co.
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Bryant Chemical Corp.	134	C
*Buffalo Forge Co.	259	A
*Butterworth & Sons Co., H. W.	126	E
*Caldwell Co., W. E.	287	B E
Caledonian Dye Works	283	G
Carborundum Co., The	38	T
Carrier Corp.	56	A
*Carter Traveler Co. Div. of Carter Inc., A. B.	303	T
Celanese Corp. of America	223	G
Century Electric Co.	10	F
Cities Service Oil Co.	193	M
Clark Equipment Co., Industrial Truck Div.	198	P
Clark Mfg. Co.	173	H
Cleveland Worm & Gear Co.	83	Q
Clipper Belt Lacer Co.	279	Q
C-O-Two Fire Equipment Co.	249	B
*Cole Mfg. Co., R. D.	228	E
Colgate-Palmolive-Peet Co.	6	C
Columbia-Southern Chem. Corp.	132	C
Commercial Factors Corp.	Inside Front Cover	N
*Continental-Diamond Fibre Co.	248	O
*Cook-P & N Machine Co., Inc.	136	E
*Crane Co.	82	H
*Crane Mfg. Co.	242	L
*Crompton & Knowles Loom Wks.	32	R
Crucible Steel Co.	19	O
Curlator Corp.	215	T
Custom Scientific Inst. Co.	256	K
Cutler-Hammer, Inc.	67	F
Dana Warp Mills	283	G
*Darnell Corp., Ltd	226	P
*Dary Ring Traveler Co.	250	T
*Davis & Furber Machine Co.	238	E
Dayton Rubber Co., The	44-45	RT
Dexter Chemical Co.	246	C
Dietert Co., H. W.	244	K
Dixie Leather Corp.	41	R
Dodge Mfg. Corp.	86	Q
*Dommerich & Co., Inc., L. F.	36	N
Dow Chemical Co., Saran Lined Pipe Co.	304	H
*Draper Corporation	1	R
Duesberg-Bosson of Amer.	277	T
*DuPont de Nemours & Co., Rayon Dept.	14	G
Edroy Products Co.	274	N
Erick-Gross Corp.	42	L
Fairbanks, Morse & Co.	233	K
Falls Yarn Mills	242	G
Feustel, Inc., Ernest A.	271	L
*Fidelity Machine Co.	258	T
*Finnell System, Inc.	8	D
Fiske Bros. Refining Co., Lubriplate Div.	202	M
*Foster Machine Co.	208	T
Foxboro Co., The	254	K
*Frankl Associates, Ernest L.	221	T
Franklin Process Co.	207	G
Friez Instrument Div., Bendix Aviation Corp.	234	K
Fuller Brush Co.	184	D
Furtex, Inc.	276	E
*Gaston County Dyeing Mach. Co.	30	E
Gates Rubber Co., The	87	R
General Chemical Div., Allied Chem. & Dye Corp.	205	C
*General Electric Co.	68-69	F
*Gessner Co., David	275	E
Glasco Equipment Corp.	204	E
Goodyear Tire & Rubber Co.	9	Q
Graton & Knight Co.	41	R
Gulf Oil Corp.—Gulf Refining Co.	49	M
Hardwood Mfg. Co., The	273	R
Harley-Kay-Marsland, Ltd.	232	L
*Harwood & Son, Geo. S.	234	T
*Haskell-Dawes Mach. Co., Inc.	236	T
*Hayes Industries, Inc.	48	R
*Heim Co.	188	R
Heineman Corp., O. Div. of Aetna Industrial Corp.	278	G
Herbert Products Co.	284	T
Hermas Machine Co.	206	E

Hinde & Dauch Paper Co.	63	P
*Howard Bros. Mfg. Co.	16	T
Hubinger Co.	230	C
*Hunter Machine Co., James	57	E
*Hunt Machine Co., Rodney	151	E
*Huyck & Sons, F. C.	270	E
Hyatt Bearings Div., General Motors Corp.	225	Q
*Ideal Industries, Inc.	231	T
Industrial Brush Co.	200	E
Industrial Rayon Corp.	165	G
*Ives Co., L. T.	285	L
*Jackson Moistening Co.	275	A
Jenkins Bros.	77	H
*Jiffy Textile Marker Co	286	E L R
Keever Starch Co.	199	C
*Kenyon & Son, D. R.	287	E
Kidde & Co., Inc., Walter	219	B
*Kidde Mfg. Co. 237,	247	L
Knitting Mach. & Supply Co.	230	L
*Lambeth Rope Corp.	283	RT
*Lane & Bros., Inc., W. T.	301	P
Lestershire Spool & Mfg. Co.	217	T
Libbey-Owens-Ford Glass Co., Fiber-Glass Div.	263	G
Linde Air Prods. Co., a Div. of Union Carbide & Carbon Corp.	186	L RT
*Link-Belt Co. 7,	33	Q
*Lockwood Greene Engineers	284	N
*Loper Co., Ralph E.	282	N
*Lowell Shuttle Co.	214	R
Lubriplate Div., Fiske Bros. Refining Co.	202	M
Lunkenheimer Co.	89	H
Manhattan Rubber Div.	51	E
Manheim Mfg. & Belting Co.	66	Q
Maple Flooring Mfrs. Assn.	196	B
Marquette Metal Products Co.	64	T
*Mathieson Chemical Corp.	2	C
M-B Products Co.	274	D
*McBride Co., Ed. J. 3rd Cover		R
*Meese, Inc.	272	P
Mellor, Bromley & Co., Ltd.	216	L
*Merrow Machine Co	285	E L
*Milton Machine Works, Inc	232	R
Minneapolis-Honeywell Reg. Co., Industrial Div. 84-85		K
Micro Switch Div	75	F
Mobilift Corp.	174	P
Moisture Register Co	238	K
*Monsanto Chemical Co., Phosphate Div.	183	C
Textile Chem. Dept	65	C
*Nash Co., J. M.	264	D RT
National Aniline Div., Allied Chem. & Dye Corp	35	C
Nopco Chemical Co	12	C
Oakite Products, Inc	279	C
*Onyx Oil & Chem. Co.	161	C
Page Fence Association	277	B
Page-Madden Co., Inc	175	L RT
Parks-Cramer Co.	178	A
Penick & Ford Co., Ltd	281	C
*Perkins & Sons Inc., B. F	50	E
Philadelphia Quartz Co	244	C
*Pittsburgh Corning Corp., Foamglass	265	B
*Platt Bros. (Sales) Ltd. 20-21		T
Precision Gear & Machine Co.	278	Q
*Prince, Smith & Stells 22-23		T
*Proctor & Schwartz, Inc.	251	E T
*Pure Oil Co., The	29	M
Radio Corp. of America	209	E
Raybestos Manhattan, Inc., Manhattan Rubber Div.	51	E
Red Ray Mfg. Co.	270	E
Reeves Pulley Co.	58	Q
*Reiner Inc., Robt	239	L
Reliance Electric & Eng. Co. 54-55		Q
*Richards-Wilcox Mfg. Co	253	P
Richmond Oil, Soap & Chem.	246	C
*Ridge Tool Co.	182	H
*Riggs & Lombard, Inc	190	E
*Rohm & Haas Co	179	C
Rome Soap Mfg. Co.	283	C
Ryerson & Son Inc., J. T.	228	O
Salisbury Iron Works, Inc	280	T
Sandoz Chemical Works 17-18		C

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Advertiser	Page	Classification
Sant' Andrea, Officina Meccanica, S. p. A.	221	T
Saran Lined Pipe Co.	304	H
*Sarco Co., Inc.	46	H
*Sargent's Sons Corp., C. G.	273	T
Schlahorst & Co., W.	11	RT
Schlumberger & Cie	255	T
Scragg & Sons Ltd., Ernest	267	T
Seaboard Airline R. R.	53	N
Selig Co., The	279	D
Sherwin-Williams Co.	167	B
Simco Co.	246	T
*Sipp-Eastwood Co.	268	R
Sirrine Co., J. E.	286	N
SKF Industries, Inc.	80	Q
*Smith, Drum & Co.	71	E
Smith & Son Inc., Jas.	240	T
Snap-On Tools Corp.	176	B H
Snowiss Fur Co., B.	287	R
Societe Anonyme, Adolphe Saurer	229	R
Socony-Vacuum Oil Co., Inc.	25	M
Solvay Sales Div., Allied Chem. & Dye Corp.	149	C
*Sonoco Products Co.	141	T
*Southern Shuttles Div., Steel Heddle Mfg. Co.	194-195	R
Staley Mfg. Co., A. E.	163	C
*Standard Fabricators, Inc.	241	E
*Standard Pressed Steel Co.	280, 287	O
Star Woolen Co.	13	G
Steelcote Mfg. Co.	267	B
*Steel Heddle Mfg. Co.	194-195	R
*Stop-Motion Devices Corp.	271	L
Sun Oil Company	124	C
Superior Com. Ind., Inc.	287	Q
*Supreme Knitting Mach. Co.	185	L
Taylor Instrument Cos.	261	K
Taylor-Stiles & Co.	240	T
Tennant Co., G. H.	218	D
Texas Co., The	Back Cover	M
Texmac S. A.	276	R
Textile Banking Co.	130	N
Textile Hall Corp.	88	N
*Textile Machine Works	90, 143	L
Textile Process Engineers, Inc.	246	N
Tide Water Assoc. Oil Co.	76	M
Toledo Scale Co.	224	K
*Tompkins Bros. Co.	212	L
Torrington Co., The (Needles)	73	L
Torrington Co., The (Bearings)	74	Q
Tower Iron Works	220	E
Tropical Paint & Oil Co.	31	B
Turbo Machine Co.	5	L
*Twin Disc Clutch Co.	222	Q
Tyer Rubber Co.	277	E
*US Bobbin & Shuttle Co.	81	T
*U. S. Ring Traveler Co.	242	T
U. S. Rubber Company, Mechanical Goods Div.	211	T
Textile Div.	260	G
U. S. Testing Co.	240	N
Union Carbide & Carbon Corp., Linde Air Products Co.	186	L RT
Unionmatex, Textilmaschinen-Union, G. M. B. H.	37	E RT
*Universal Winding Co.	154	T
Urquhart Lindsay & Robertson Ochar, Ltd.	255	E
Utica Novelty & Mill Spec. Co.	282	E
*Van Vlaanderen Machine Co.	47	E
*Veeder-Root, Inc.	145	K
WAK Industries	284	K
*Walker Div. of Draper Corp.	147	R
*Warner & Swasey Co.	52	T
*Wayne Mfg. Co.	244	T
Western Felt Co.	39	L RT
Westinghouse Electric Co., Lamp Div.	28	F
Micarta Div.	59	O
Motors & Controls	78-79	F
Sturtevant Div.	153	A
West Point Fdry. & Mach. Co.	243	R
Weston Electrical Inst. Corp.	40	K
Whitehead Eng'g. Co.	302	T
*Whitin Machine Wks.	15	T
Wildman Mfg. Co.	245	L
Wood's Sons Co., T. B.	275	Q
*Wyandotte Chemicals Corp.	235	C

See Searchlight Section—Pages 290-299

Mc BRIDE *Textile Equipment Data*

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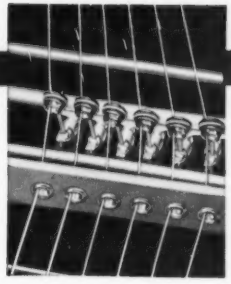
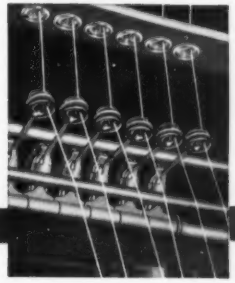
NEW McBRIDE STOP MOTION FEATURES SEALED MERCURY SWITCHES STANDARD EQUIPMENT ON ALL McBRIDE WARPING CREELS



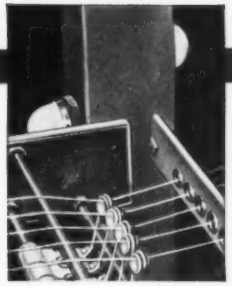
This new McBride development creates for the first time a stop motion that gives positive action under all conditions. The hermetically sealed mercury switch tubes eliminate the possibility of dust, lint or dirt preventing positive contact of the stop motion when the end breaks.

This McBride development (patent applied for) brings instantaneous action, long life, efficiency and fool-proof operation to textile stop motions. Because the switch is totally enclosed all danger of fire from sparking stop motions is eliminated and positive action is assured regardless of lint or oil conditions that will often prevent action of an open switch or the conventional type drop wire.

These stop motions are made to operate on the finest yarns, such as 15 denier nylon, on up to the coarsest cotton and woolen yarns.



Two-way signal lights, mounted in steel channels for protection, speed the location of broken ends by providing a signal that can be seen from either the creel or the warper.



The greatest advances that have taken place in warping heads and in magazine creels are completely lost if the stop motion fails to act and permits an end to be lost, thus reducing the value of the warp and leading to seconds in the fabric. Step up the efficiency of your existing creels with these McBride stop motions—available as a separate unit. Write today for full details.

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